Wireless N 300 Green Router

Model # AR686W

User's Manual

Ver. 1A

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FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against radio interference in a commercial environment. This equipment can generate, use and radiate radio frequency energy and, if not installed and used in accordance with the instructions in this manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures are necessary to correct the interference.

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Chapter 1 Product Information

1.1 Introduction and safety information

Congratulations on your purchase of the Airlink101® AR686W Wireless N 300 Green Router. This Router is recommended to be used with AirLink101® Wireless N 300 products to provide the best performance. The high bandwidth combined with extended wireless coverage delivers fast and reliable connections for all of your networking applications. The built-in gigabit switch highly increases the wired Ethernet speed.

The Green power saving technology intelligently reduces power consumption when no network activity is detected. A full range of security features such as WEP, WPA-PSK, and WPA2-PSK provide the highest level of wireless network security. The bundled EZ Setup Wizard allows you to set up the router with an easy-to-use user interface. Best of all, AR686W works with all 802.11n / g / b network devices which ensures compatibility with the existing wireless products.

Other features of this router including:

- Support high wireless data rate of up to 300Mbps* with 802.11n standard
- Built-in 4-port full-duplex 10/100Mbps Switch to connect your wired network up to Fast Ethernet speeds, with cable length and link down power saving
- Support virtual server, ALG, DMZ and UPnP for various networking applications
- Support multiple sessions IPSec, L2TP and PPTP VPN pass-through
- Advanced NAT+SPI firewall with DoS detection prevents your network from outside attacks
- Wirelessly connect to another 4 AR686W routers with WDS (Wireless Distribution System) supported
- Establish secured wireless connection via Easy Setup Button(WPS compatible)
- QoS (Quality of Service) designed for prioritizing multimedia data transmission (i.e. VoIP, online gaming or movie streaming, etc.)

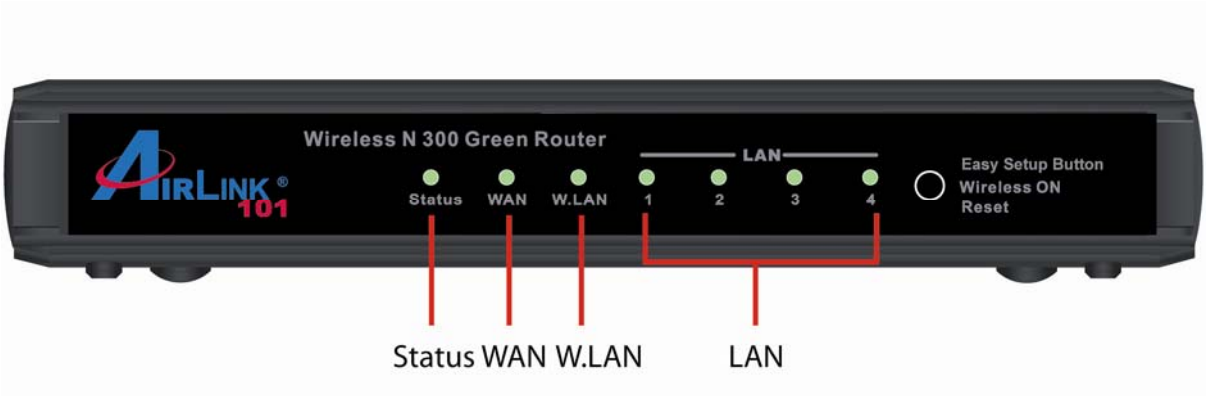
1.2 Package Contents

Before you start using this router, please check if there is anything missing in the package, and contact your dealer of purchase to claim for missing items:

1. Wireless N 300 Green Router with 2 un-detachable Antennas
2. Power Adapter
3. Setup CD
4. Quick Installation Guide
5. Ethernet Cable

1.3 Familiar with your new Green Router

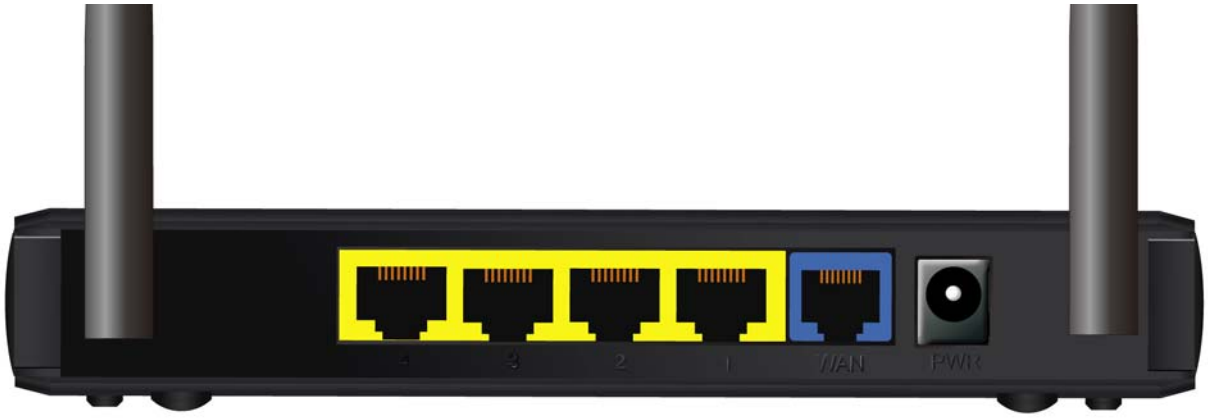
A. Front Panel



LED	Status	Description
Status	Blinking (Green)	Device status is working properly.
WAN	On (Green)	Network device is connected
	Blinking	Data access
	Off	Not connected
LAN 1~4	On (Green)	Network device is connected
	Blinking	Data access
	Off	Not connected
W.LAN	On (Green)	Wireless feature is on
	Blinking	Data access
	Blinking Rapidly	Device is in WPS™ PBC mode
	Off	Wireless feature is disabled

Button	Description
Easy Setup Button (WPS™ compatible)	When Wireless is ON, press this button and release it immediately to start security synchronization function (WPS™ compatible).
Wireless On	Press this button and hold it for about 1 sec. to turn on/off router's wireless radio.
Reset	Press this button and hold for 4 seconds to restore factory default settings.

B. Back Panel



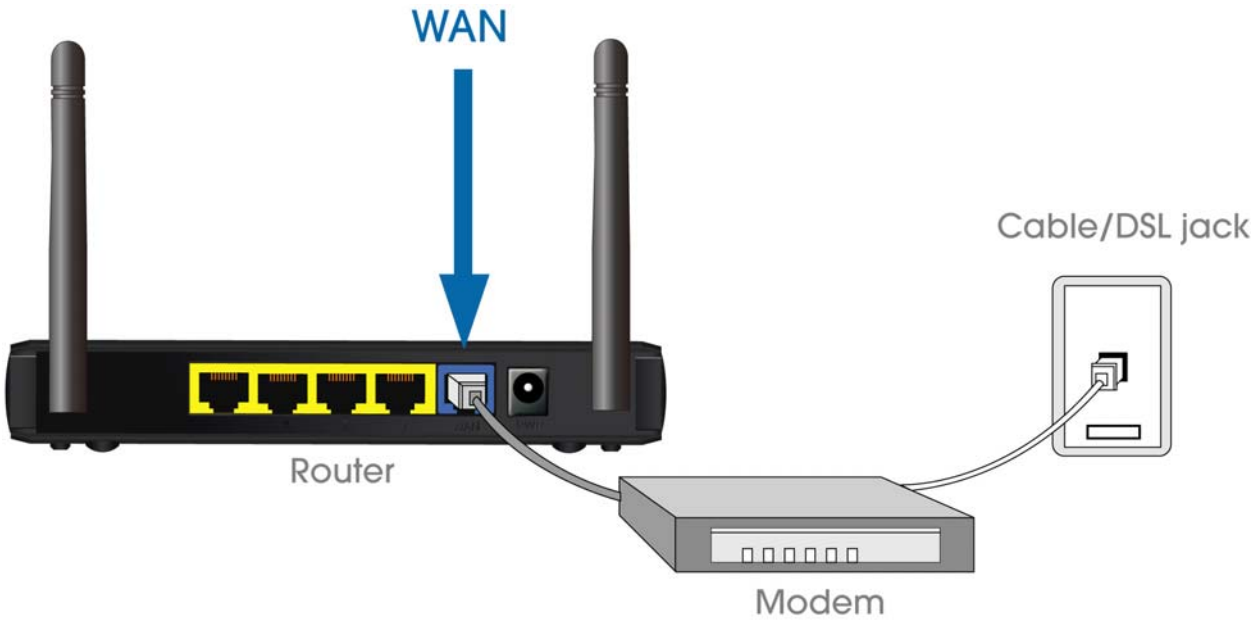
Item Name	Description
Antennas	These antennas are un-detachable 1.8dBi dipole antennas.
1 - 4	Local Area Network (LAN) ports 1 to 4.
WAN	Wide Area Network (WAN / Internet) port.
PWR	Power connector, connects to A/C power adapter.

Chapter 2 Configure the Router

2.1 Connect the Router to your network

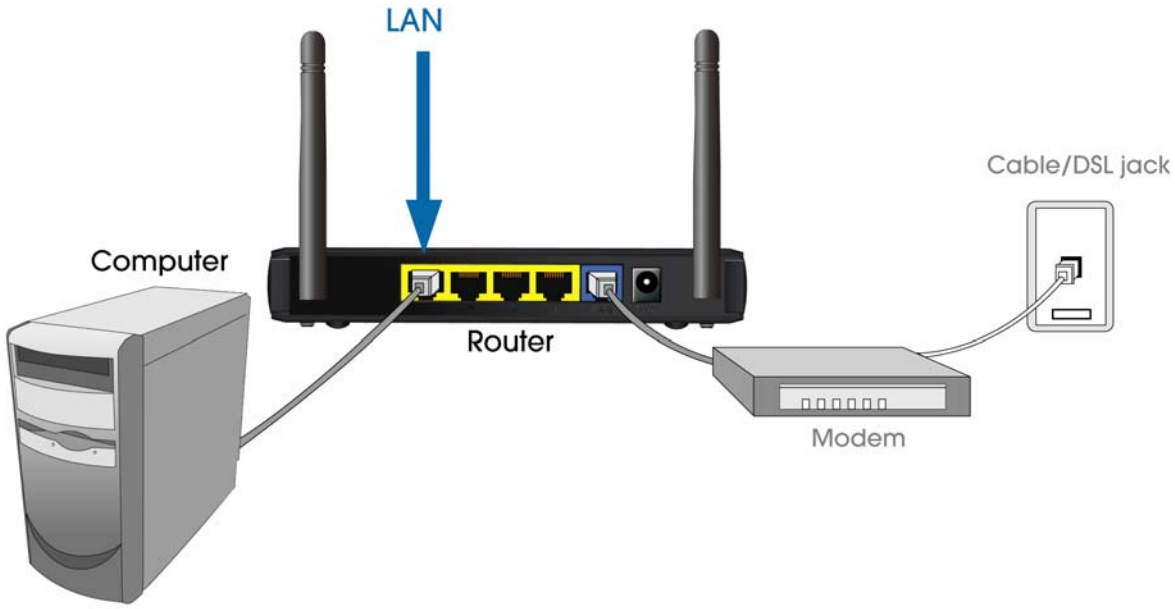
Note: Prior to connecting the router, be sure to power off your computer, DSL/Cable modem, and the router.

Step 1 Connect one end of a network cable to the **WAN** port of the router and connect the other end of the cable to the DSL/Cable modem.

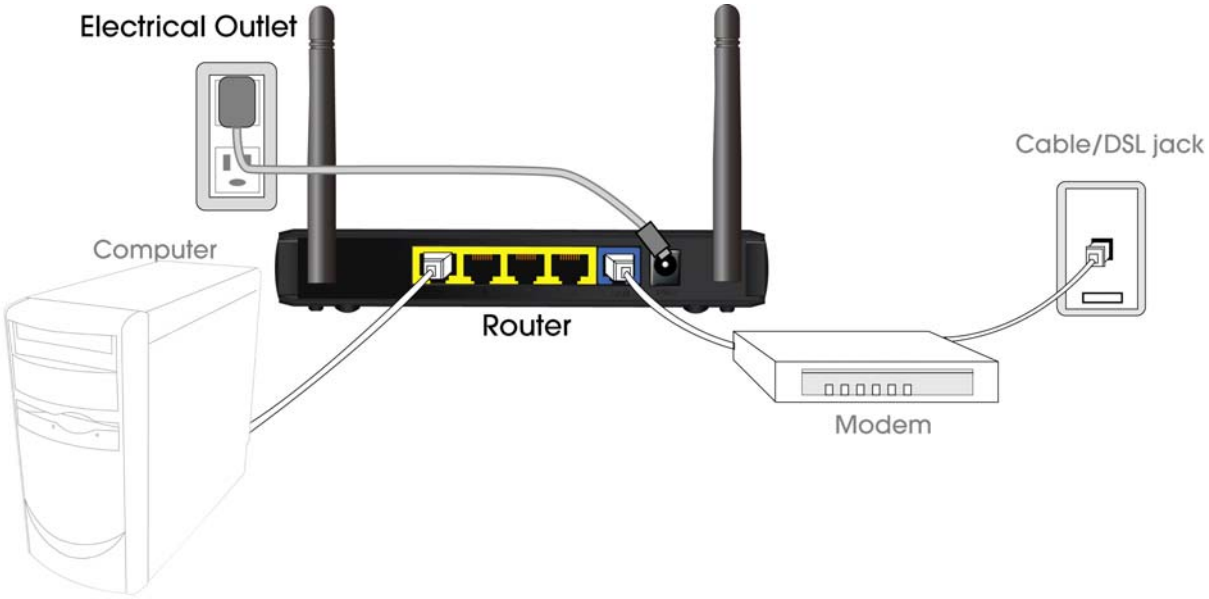


Step 2 Power on the modem.

Step 3 With another network cable, connect one end of the cable to your computer's **Ethernet** port and connect the other end to one of the **LAN** ports of the router, as shown in the following figure. (After setup finishes, you can remove the network cable between the computer and router if you want to use wireless connection.)



Step 4 Plug the power adapter to the router and connect it to an electrical outlet.

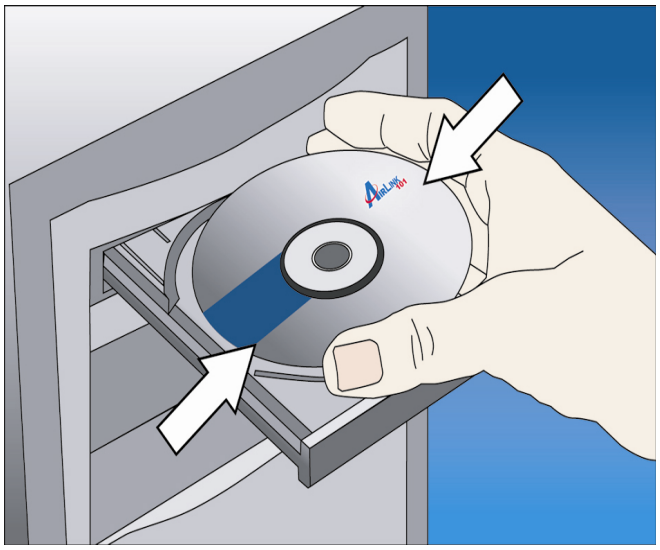


Step 5 Power on your computer.

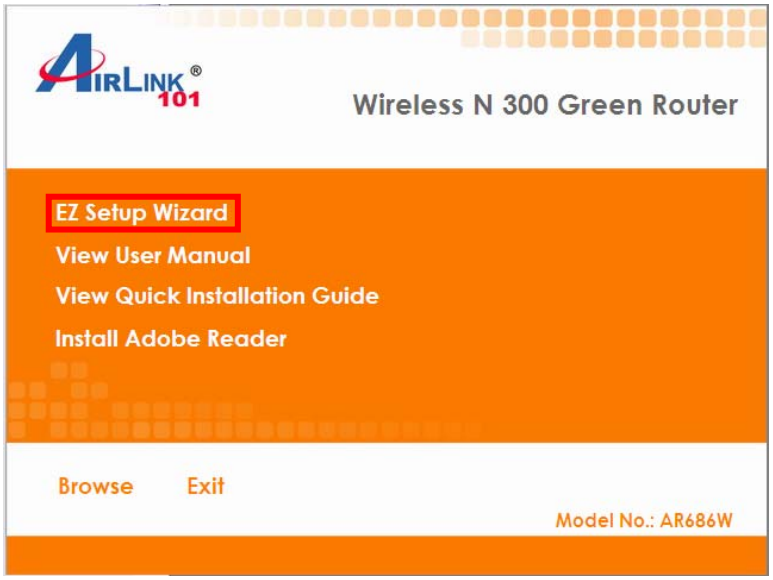
Step 6 Check LEDs of the router: make sure **Status, WAN**, **W.LAN**, and the **LAN** port that the computer is connected to are ON.

2.2 Configure the Router with EZ Setup Wizard

Step 1 Insert the Setup CD into CD-ROM drive.

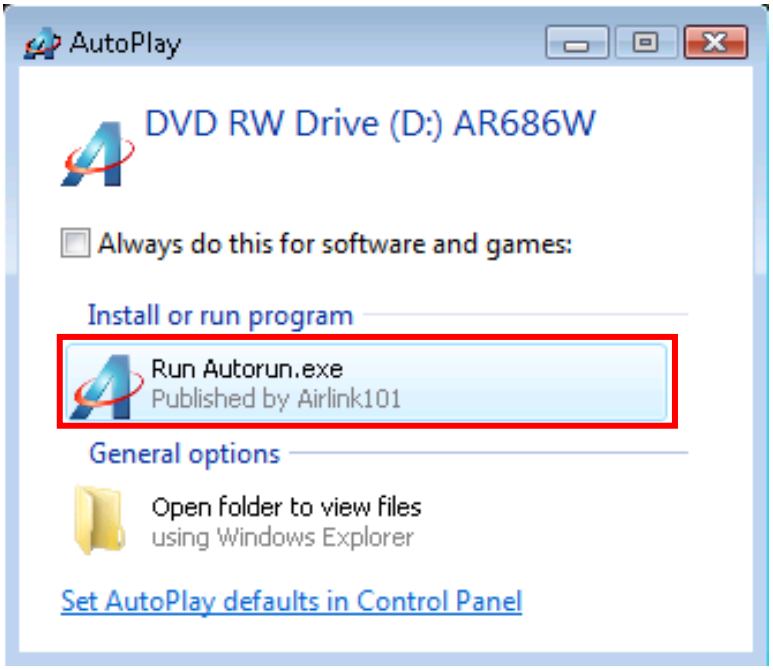


Step 2 When the autorun menu pops up, click EZ Setup Wizard.

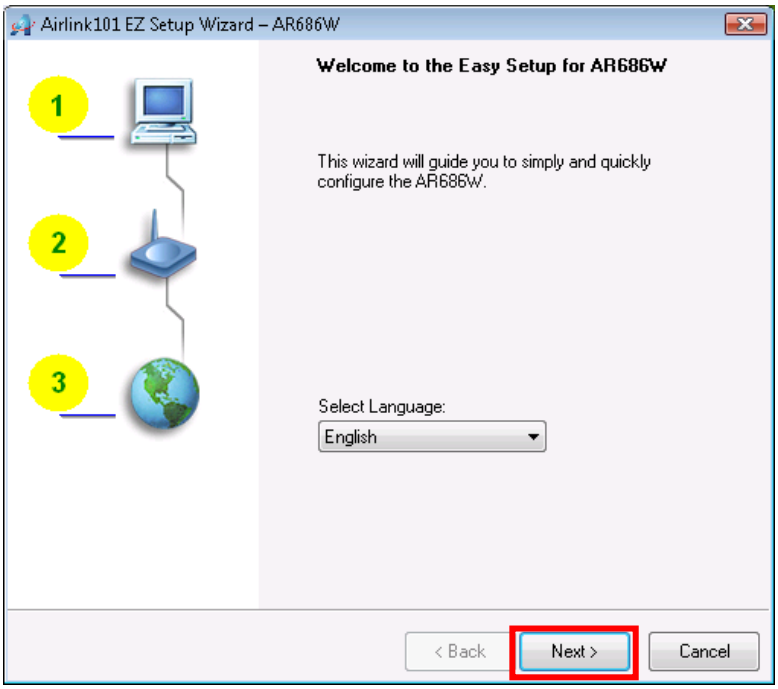


Note: If the autorun menu does not show up on your monitor, please go to ***Computer → CDROM drive → Wizard****, and execute "****EZWizard.exe****".*

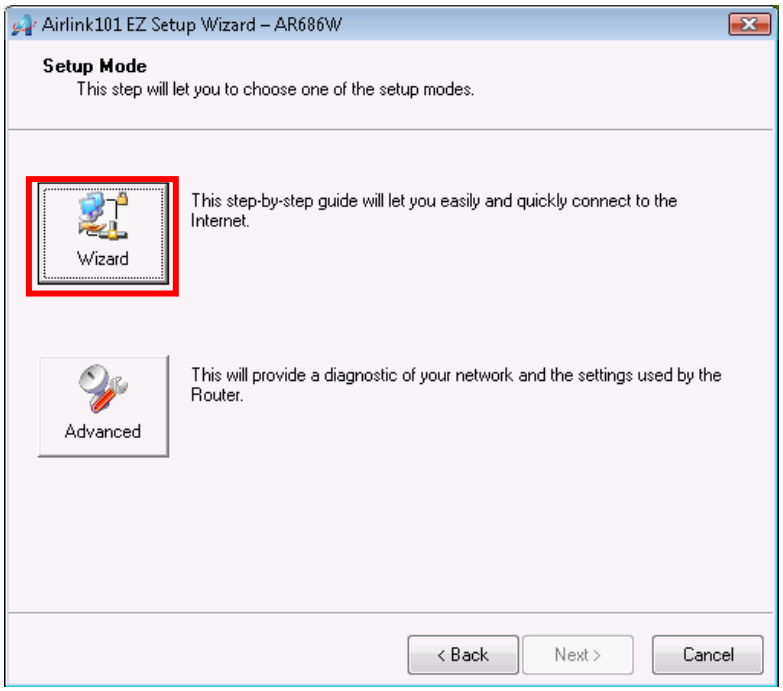
Windows 7 and Vista users: an AutoPlay window pops up on screen, please make sure you give permission to run the setup program by clicking **Autorun.exe**.



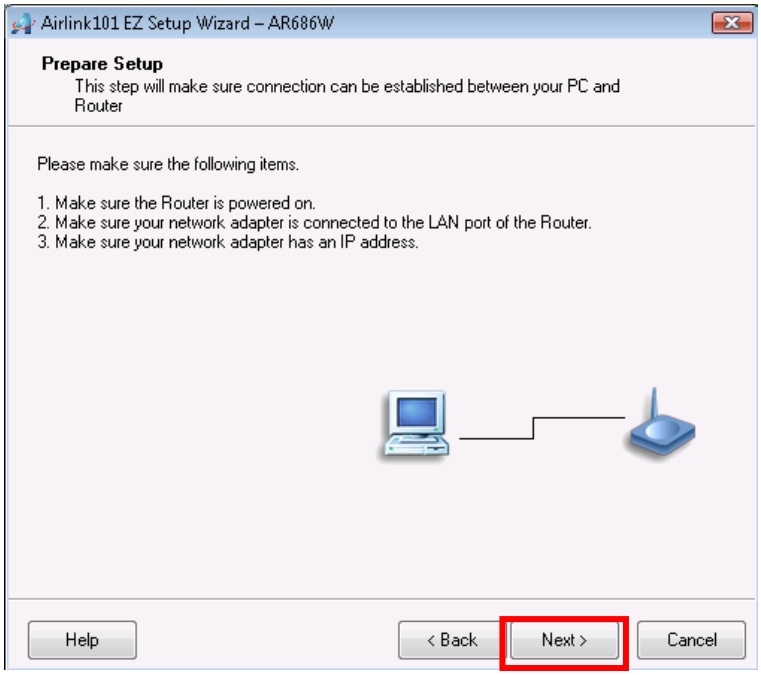
Step 3 Select your language and click **Next**.


Airlink101 EZ Setup Wizard – AR686W
Welcome to the Easy Setup for AR686W
This wizard will guide you to simply and quickly configure the AR686W.
Select Language:
English
< Back
Next >
Cancel

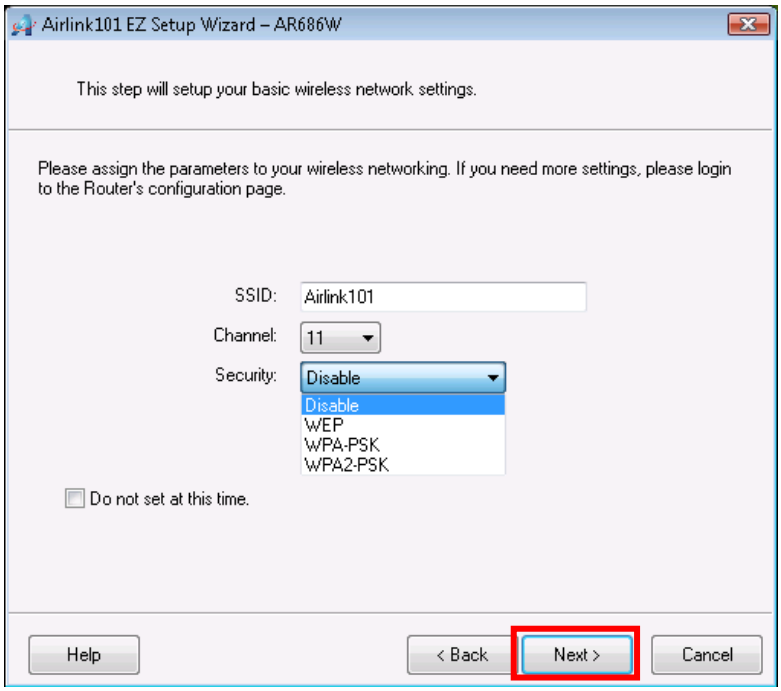
Step 4 Click on **Wizard**.


Airlink101 EZ Setup Wizard – AR686W
Setup Mode
This step will let you to choose one of the setup modes.
Wizard
This step-by-step guide will let you easily and quickly connect to the Internet.
Advanced
This will provide a diagnostic of your network and the settings used by the Router.
< Back
Next >
Cancel

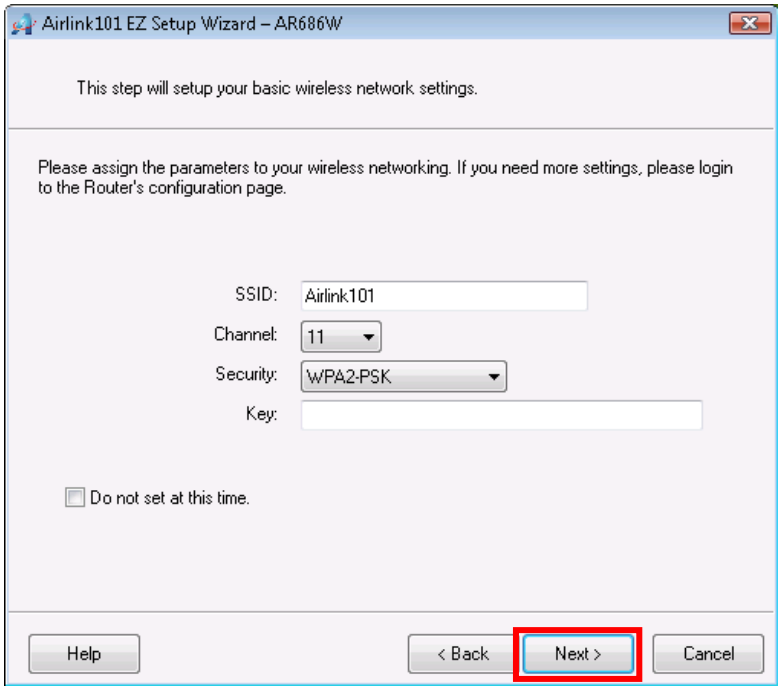
Step 5 Please make sure your computer is connected to one of the 4 LAN ports of the router, and your modem is connected to the WAN port of the router.


Airlink101 EZ Setup Wizard – AR686W
Prepare Setup
This step will make sure connection can be established between your PC and Router
Please make sure the following items.
1. Make sure the Router is powered on.
2. Make sure your network adapter is connected to the LAN port of the Router.
3. Make sure your network adapter has an IP address.
Help
< Back
Next >
Cancel

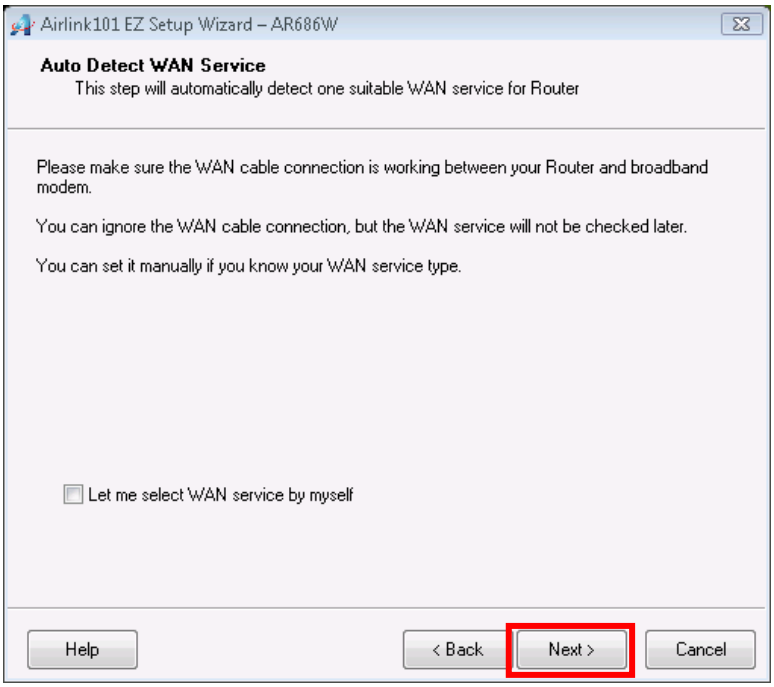
Step 6 Click **Next** to configure the basic wireless settings. The default wireless encryption setting is disabled. It is suggested to select **WPA2-PSK** for best wireless security.



Step 7 Configure the SSID (wireless network name, i.e. Airlink101), Channel, Security and Key. Enter 8~63 characters into Key box, then click **Next**.



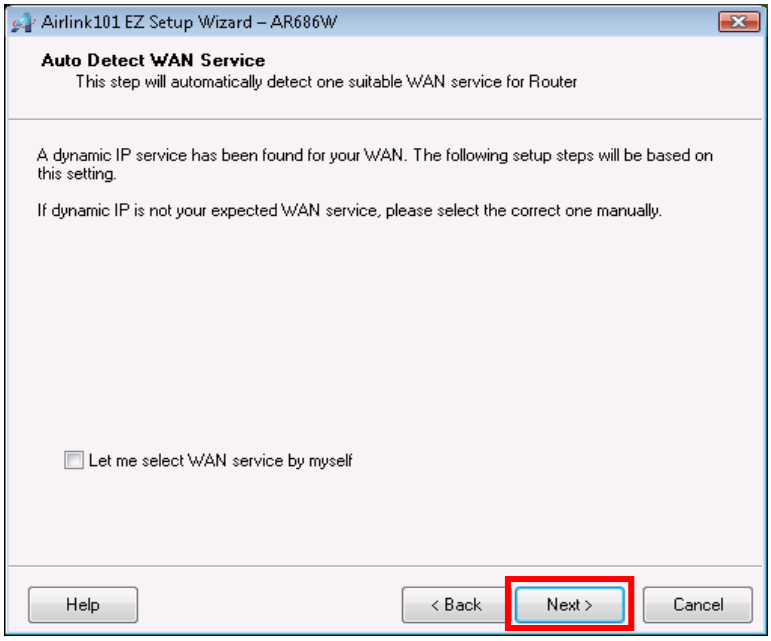
Step 8 Click **Next** and the wizard will detect your WAN settings, or you can select your WAN type manually by checking “Let me select WAN service by myself”.


Airlink101 EZ Setup Wizard – AR686W
Auto Detect WAN Service
This step will automatically detect one suitable WAN service for Router
Please make sure the WAN cable connection is working between your Router and broadband modem.
You can ignore the WAN cable connection, but the WAN service will not be checked later.
You can set it manually if you know your WAN service type.
Let me select WAN service by myself
Help
< Back
Next >
Cancel

Step 9 Enter the settings based on your WAN service type.

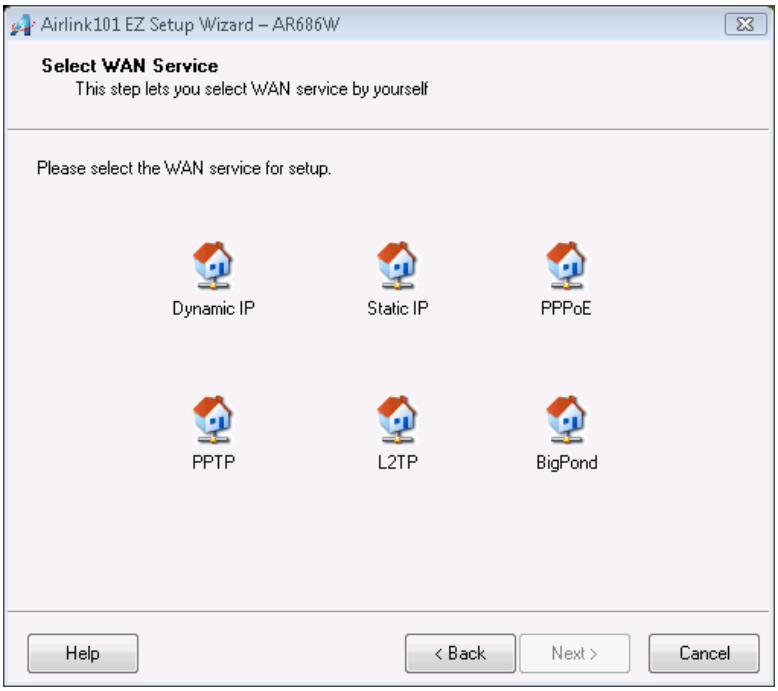
Cable (Dynamic IP)

If you are using cable Internet service, your WAN type is “Dynamic IP”. You do not need to configure anything here, and then click **Next** to continue.

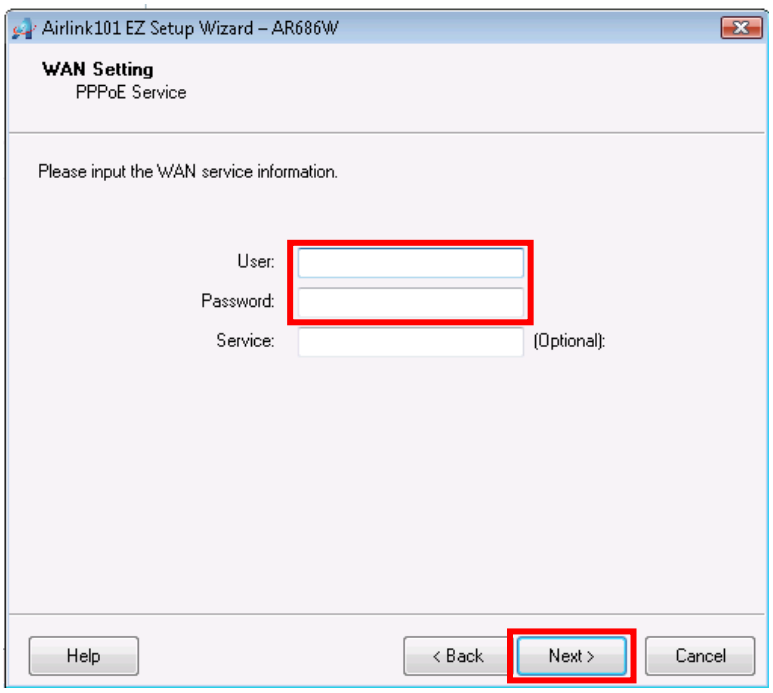

Airlink101 EZ Setup Wizard – AR686W
Auto Detect WAN Service
This step will automatically detect one suitable WAN service for Router
A dynamic IP service has been found for your WAN. The following setup steps will be based on this setting.
If dynamic IP is not your expected WAN service, please select the correct one manually.
Let me select WAN service by myself
Help
< Back
Next >
Cancel

DSL (PPPoE or Dynamic IP)

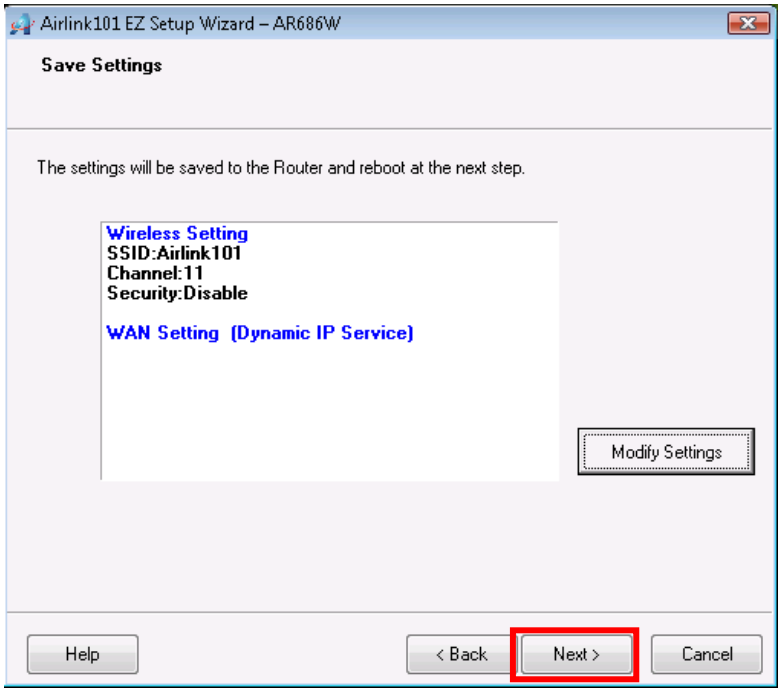
For DSL users, your WAN type is either PPPoE or Dynamic IP. You can try both types and determine which one works for you.



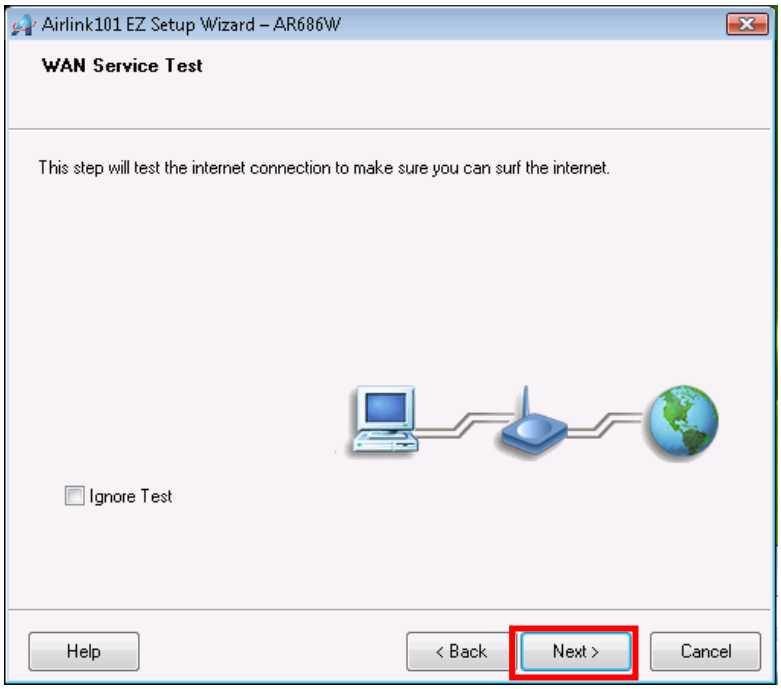
For PPPoE connection, please enter the user name and password provided by your ISP (Internet Service Provider). ***Note:*** *Depending on the ISP, you may need to include the domain name with your user name.* **Example: username@sbcglobal.net**



Step 10 Verify the settings you have configured. Click **Next** to save the settings and reboot the router. This will take about 30 seconds.

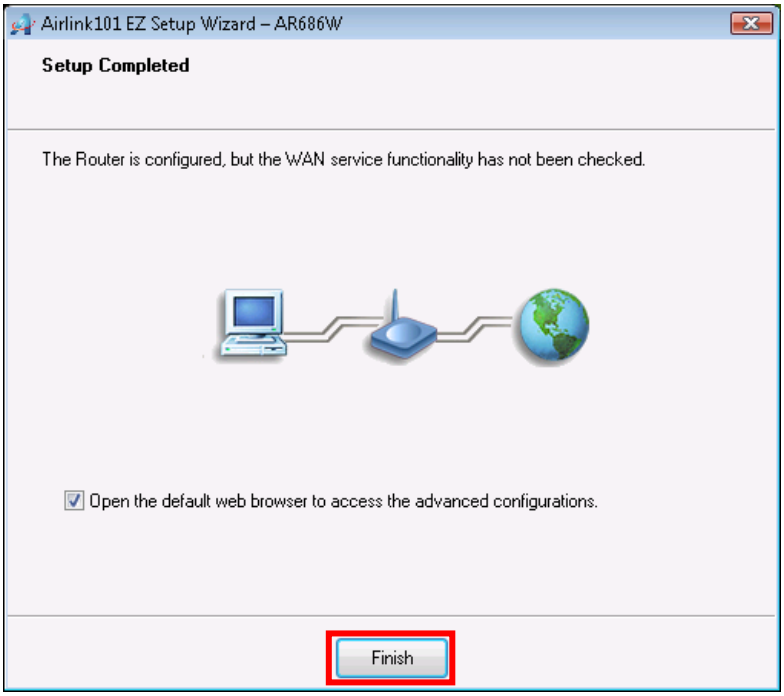


Step 11 Click **Next** to test the Internet Connection, or you can ignore the test, just open the Internet browser and verify if you are connected to the Internet.

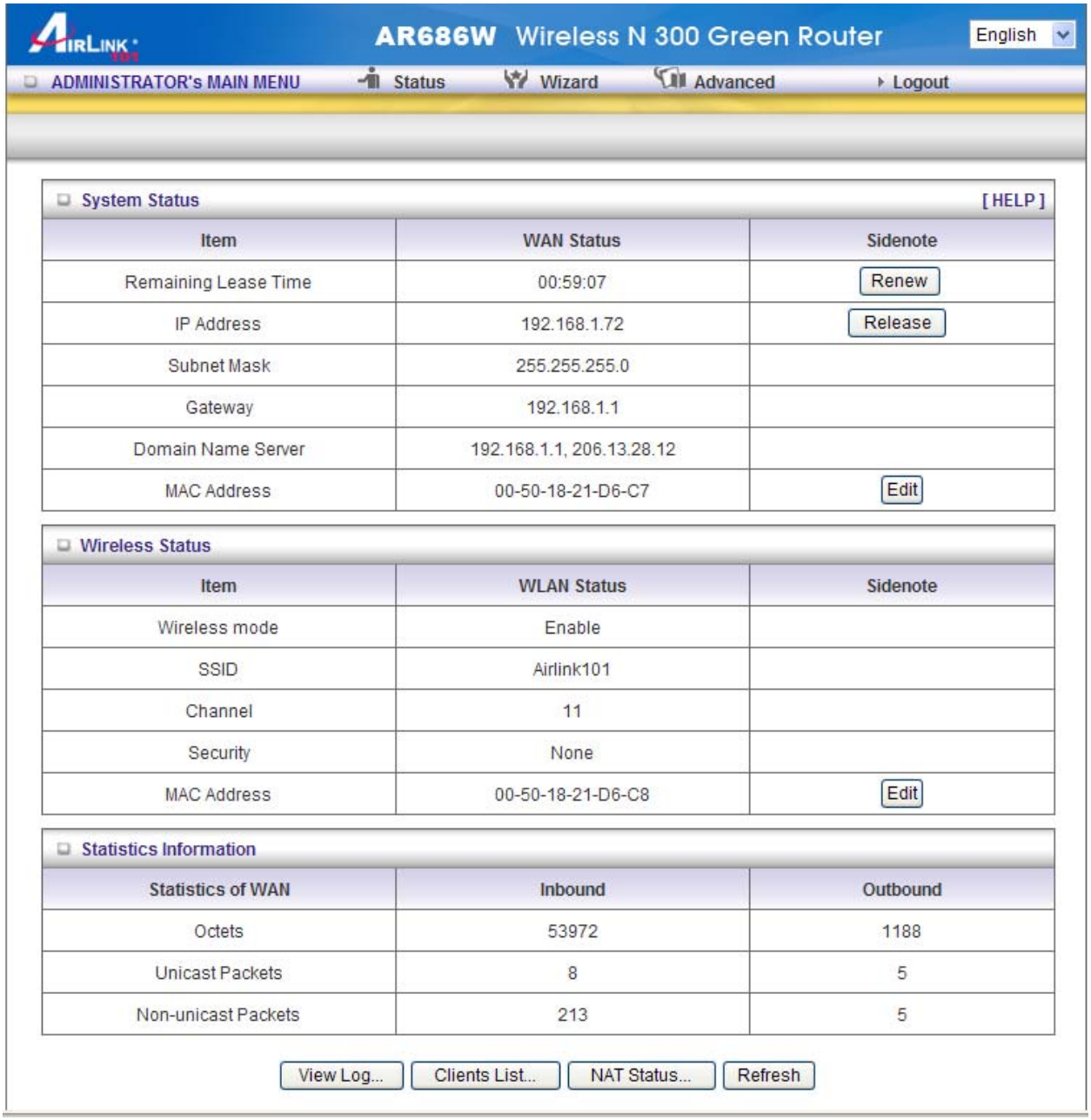

Airlink101 EZ Setup Wizard – AR686W
WAN Service Test
This step will test the internet connection to make sure you can surf the internet.
Ignore Test
Help
< Back
Next >
Cancel

If you cannot connect to the Internet, please go to **Section 4, Troubleshooting**.

Step 12 After the WAN service test completed, click **Finish**. The wizard will open the web configuration page for the router automatically unless you uncheck the checkbox below “Open the default web browser to access the advanced configuration”.


Airlink101 EZ Setup Wizard – AR686W
Setup Completed
The Router is configured, but the WAN service functionality has not been checked.
Open the default web browser to access the advanced configurations.
Finish

You will see the status of the router on the web configuration page brought up by the web browser. Valid numbers should be assigned to IP Address, Subnet Mask and Gateway, instead of all 0’s.

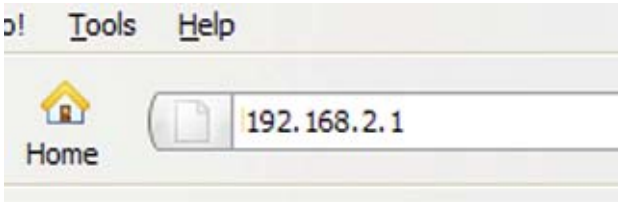

AR686W Wireless N 300 Green Router
English
ADMINISTRATOR's MAIN MENU
Status
Wizard
Advanced
Logout
System Status
[HELP]
Item
WAN Status
Sidenote
Remaining Lease Time
00:59:07
Renew
IP Address
192.168.1.72
Release
Subnet Mask
255.255.255.0
Gateway
192.168.1.1
Domain Name Server
192.168.1.1, 206.13.28.12
MAC Address
00-50-18-21-D6-C7
Edit
Wireless Status
Item
WLAN Status
Sidenote
Wireless mode
Enable
SSID
Airlink101
Channel
11
Security
None
MAC Address
00-50-18-21-D6-C8
Edit
Statistics Information
Statistics of WAN
Inbound
Outbound
Octets
53972
1188
Unicast Packets
8
5
Non-unicast Packets
213
5
View Log...
Clients List...
NAT Status...
Refresh

2.3 Configure the Router with Web Configuration Utility

Another approach to configure the router is using the Wizard in the Web Configuration Utility. The wizard will guide you setting up the basic settings of this router. You do not need to go through the wizard again if you have finished *2.2 Configure the Router with EZ Setup Wizard.*

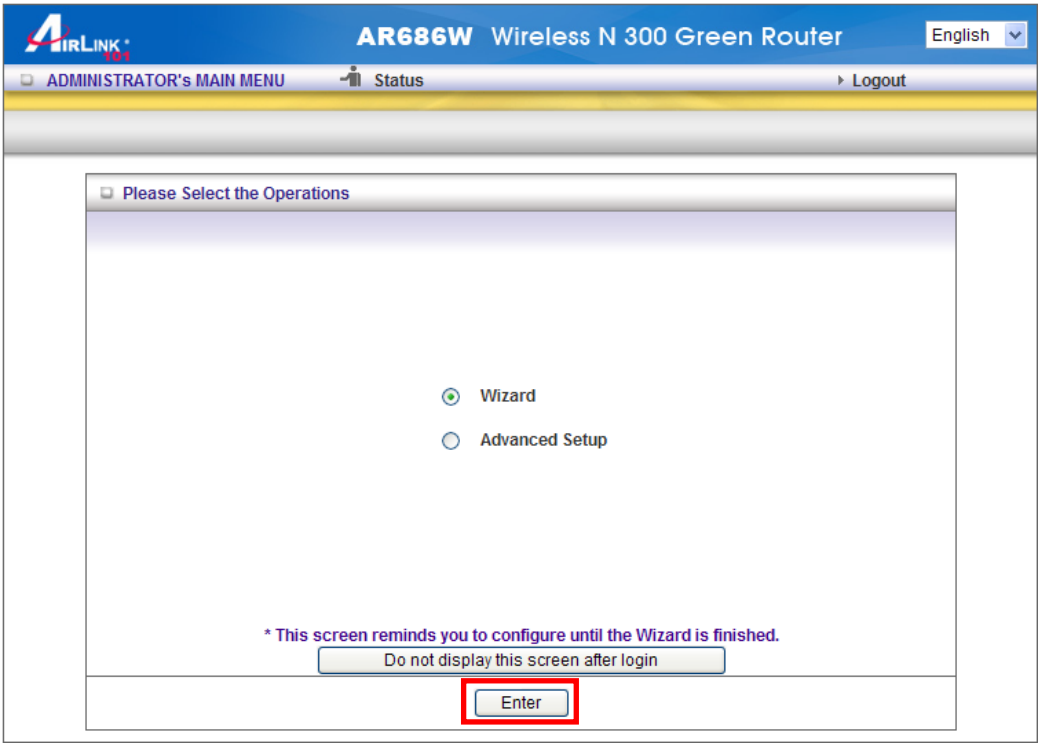
In order to enter the Web Configuration Utility, you need to first log in to the router from your web browser. Please follow the steps below:

Step 1 Open the web browser (i.e. Internet Explorer or Mozilla Firefox) of the computer connected to the router and type **192.168.2.1** or the IP address you assigned to this router in the address bar and press **Enter**.

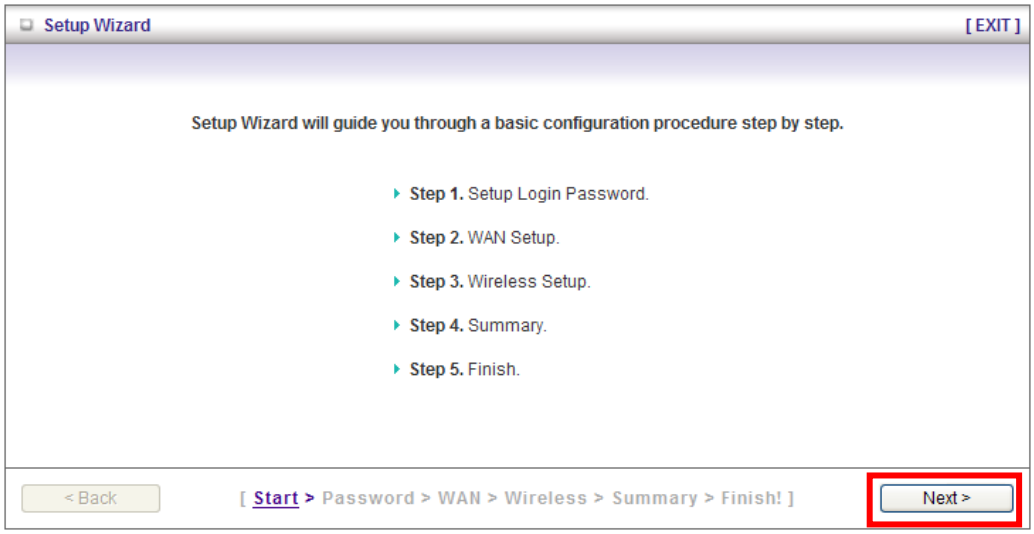


Step 2 Enter the system password and click **Login**. (The default password is “admin”.)

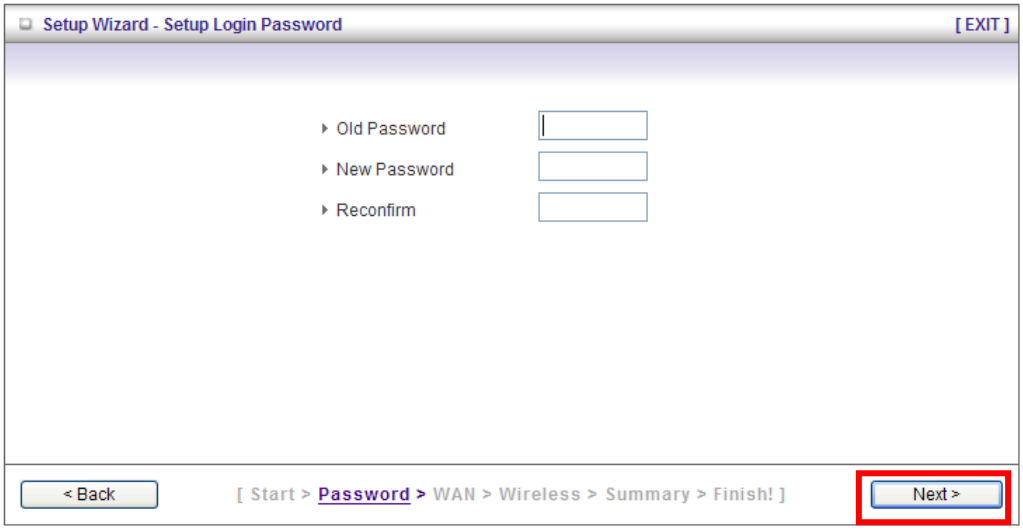
Step 3 When you see this following page pops up, you have successfully logged into the router. Select **Wizard** and click on **Enter** to start the Setup Wizard.



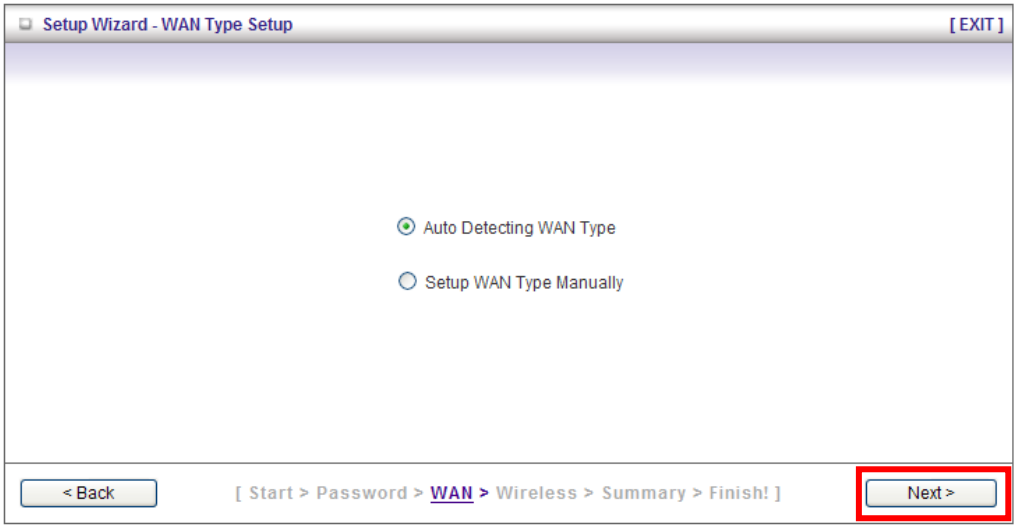
Step 4 Click **Next** to start the Setup Wizard.


Setup Wizard
[EXIT]
Setup Wizard will guide you through a basic configuration procedure step by step.
Step 1. Setup Login Password.
Step 2. WAN Setup.
Step 3. Wireless Setup.
Step 4. Summary.
Step 5. Finish.
< Back
[Start > Password > WAN > Wireless > Summary > Finish!]
Next >

Step 5 To change the System Password, enter the current password, new password and reconfirm the new password. (The default password is 'admin'.) If you do not wish to change the password, please leave all fields blank. Click **Next**.



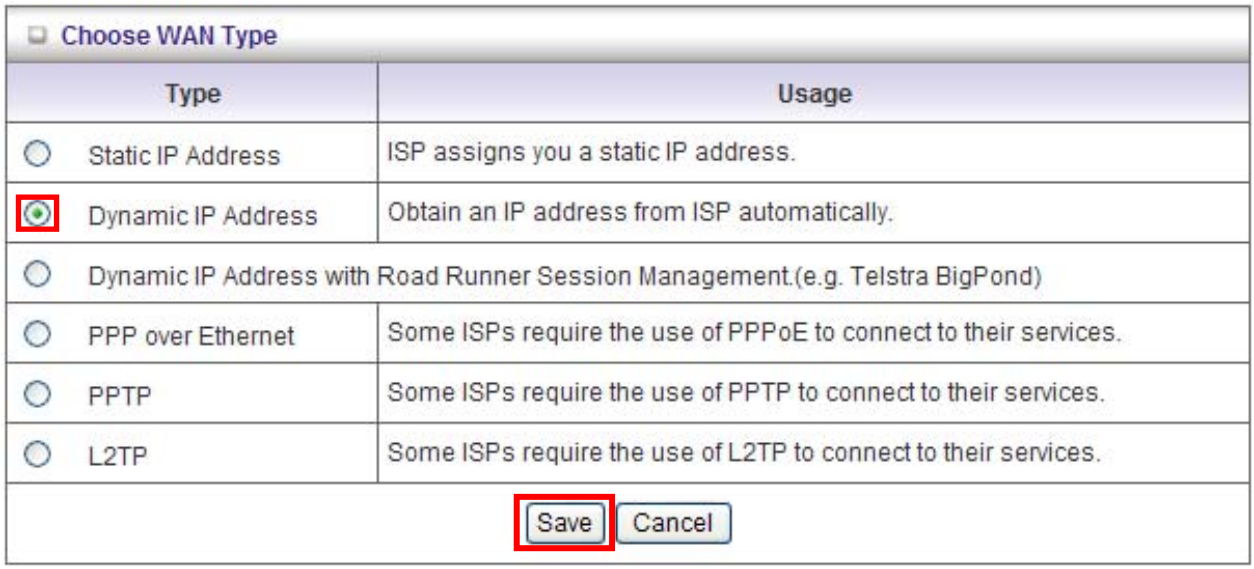
Step 6 Select **Auto Detecting WAN Type** to let the Wizard detect which Internet connection you are using or select **Setup WAN Type Manually** to select the Internet connection type manually. Click **Next**.


Setup Wizard - WAN Type Setup
[EXIT]
Auto Detecting WAN Type
Setup WAN Type Manually
< Back
[Start > Password > WAN > Wireless > Summary > Finish!]
Next >

If you select **Setup WAN Type Manually**, please specify a WAN type you are using.

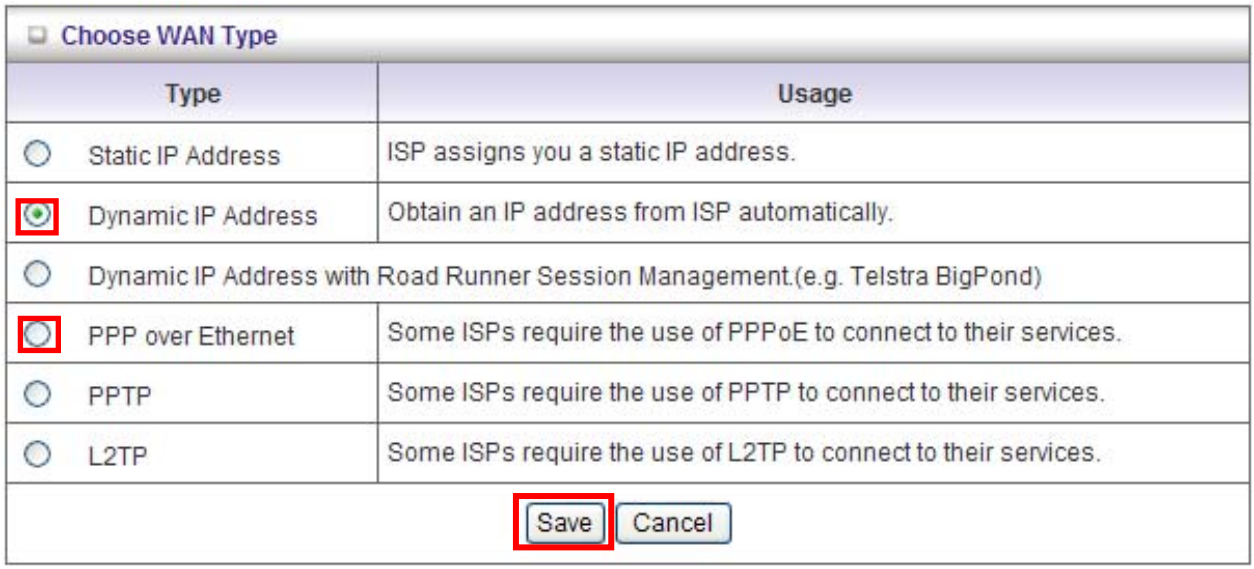
For Cable Users:

Please select **Obtain an IP address from ISP automatically (Dynamic IP Address)**.


Choose WAN Type
Type
Usage
Static IP Address
ISP assigns you a static IP address.
Dynamic IP Address
Obtain an IP address from ISP automatically.
Dynamic IP Address with Road Runner Session Management.(e.g. Telstra BigPond)
PPP over Ethernet
Some ISPs require the use of PPPoE to connect to their services.
PPTP
Some ISPs require the use of PPTP to connect to their services.
L2TP
Some ISPs require the use of L2TP to connect to their services.
Save
Cancel

For DSL Users:

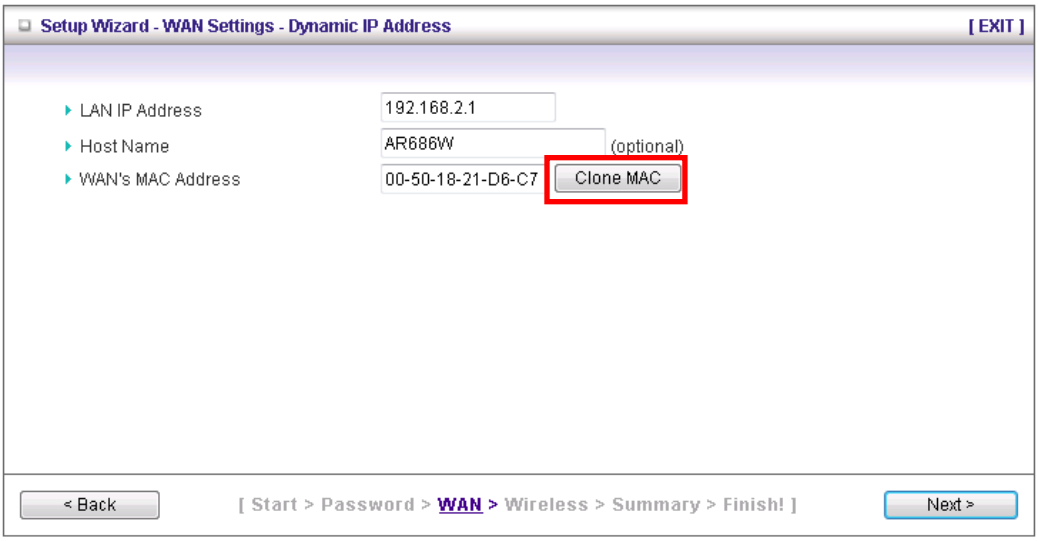
You may select either **Obtain an IP address from ISP automatically (Dynamic IP Address)** or **Some ISPs require the use of PPPoE to connect to their services (PPP over Ethernet)** depending on the type of modem provided by your ISP (Internet Service Provider). You can try both settings and determine which one works for you.


Choose WAN Type
Type
Usage
Static IP Address
ISP assigns you a static IP address.
Dynamic IP Address
Obtain an IP address from ISP automatically.
Dynamic IP Address with Road Runner Session Management.(e.g. Telstra BigPond)
PPP over Ethernet
Some ISPs require the use of PPPoE to connect to their services.
PPTP
Some ISPs require the use of PPTP to connect to their services.
L2TP
Some ISPs require the use of L2TP to connect to their services.
Save
Cancel

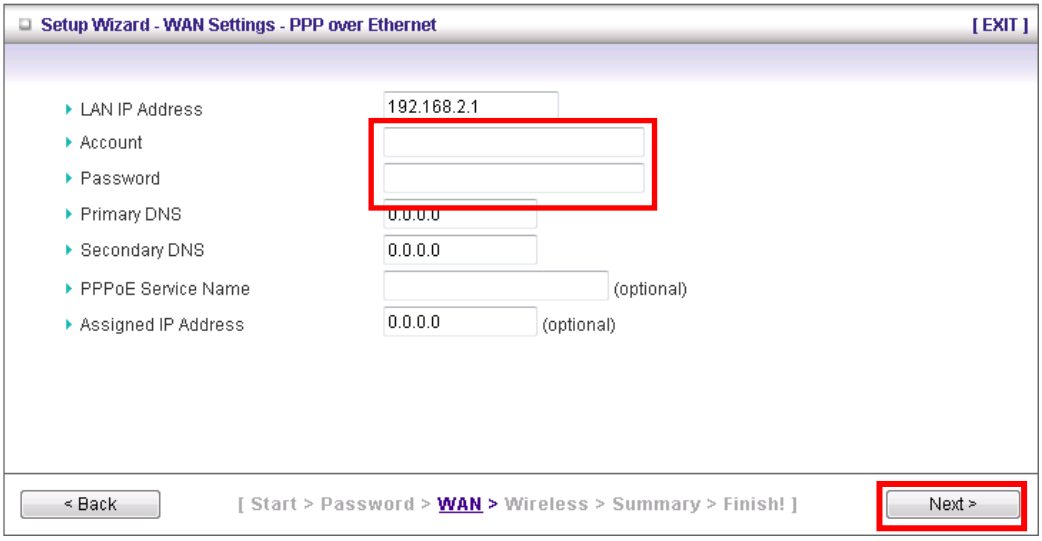
Click **Save**.

Step 7 Configure the WAN settings according to the WAN type you selected.

Dynamic IP Address: Click on **Clone MAC**.



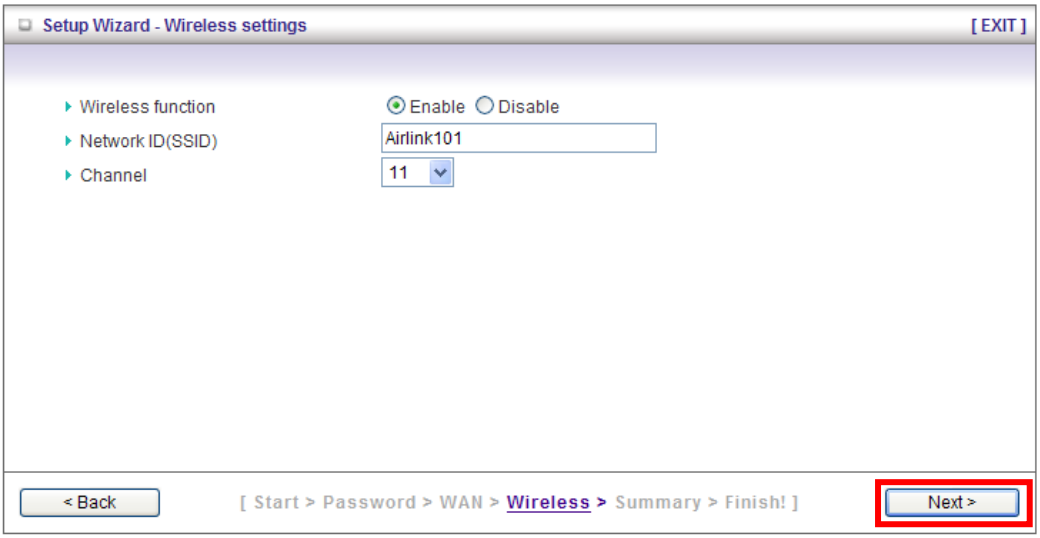
PPP over Ethernet: Enter the Account and Password provided by your ISP.



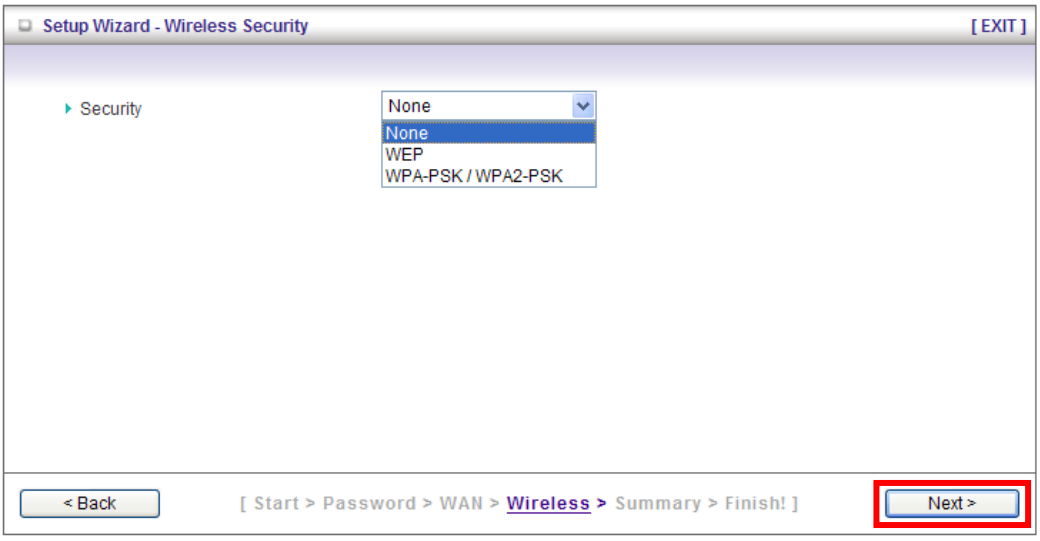
Note: *Depending on the ISP, you may need to include the domain name with your user name.*

Example: username@sbcglobal.net

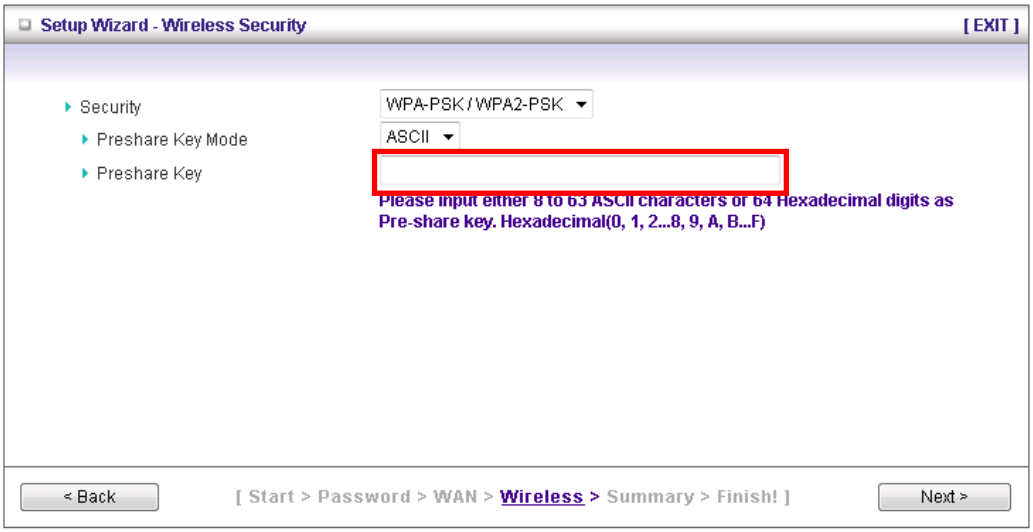
Step 8 Keep the default SSID (wireless network name: Airlink101) or change it to a desired name, so you can always recognize your wireless network with it, for example 'myHome'. Select a channel number for your wireless network. Click **Next**.



Step 9 Set up Wireless Security for your router. It is recommended to select **WPA2-PSK (AES)** for security to protect your wireless network from unauthorized users.

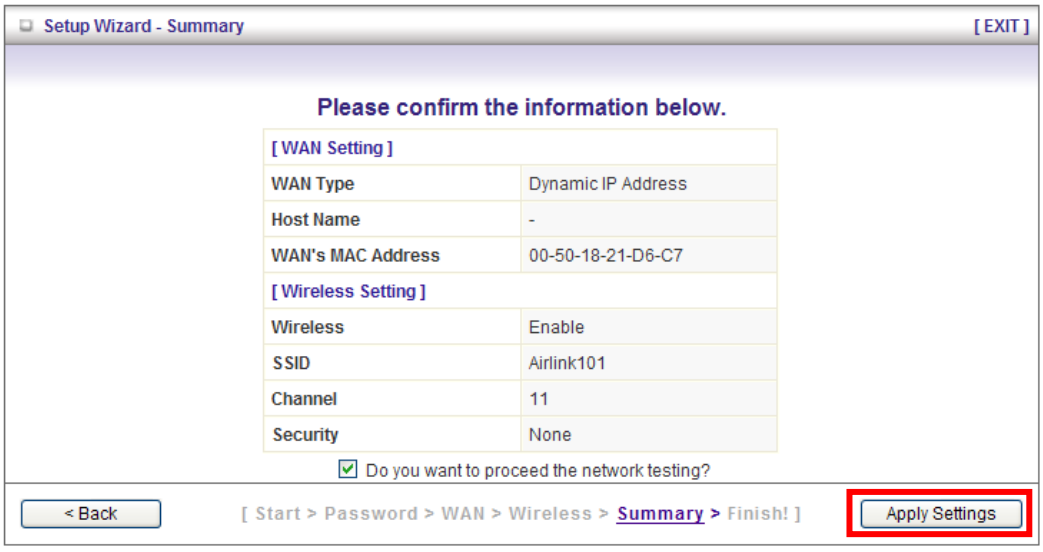


Type in 8 to 63 characters into **Preshare Key** box. Click **Next**.

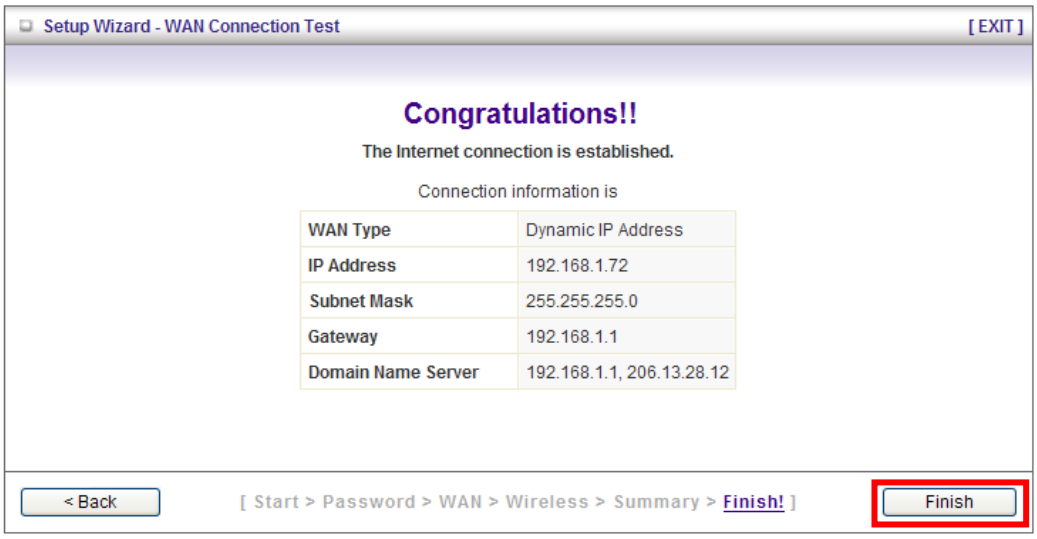

Setup Wizard - Wireless Security
[EXIT]
Security
WPA-PSK / WPA2-PSK
Preshare Key Mode
ASCII
Preshare Key
Please input either 8 to 63 ASCII characters or 64 Hexadecimal digits as Pre-share key. Hexadecimal(0, 1, 2...8, 9, A, B...F)
< Back
[Start > Password > WAN > Wireless > Summary > Finish!]
Next >

WPA2-PSK (AES) is the most secured encryption mode for general users but some older wireless adapters may not support it. Therefore, please make sure all wireless devices on your network support this security type.

Step 10 Verify the information you have configured. If everything is correct, click **Apply Settings** to save the settings and reboot router.



Step 11 When you see the below window, you are successfully connected to the Internet. Click **Finish**.

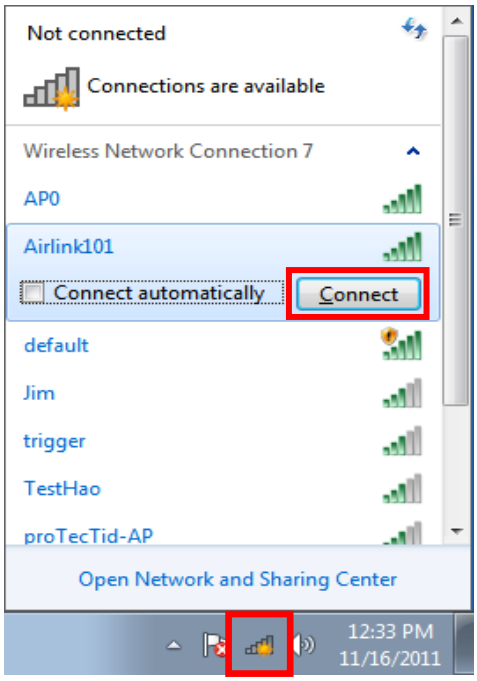


Congratulations! Your router configuration has been finished. Please go to 2.4 Connect to the Router Wirelessly.

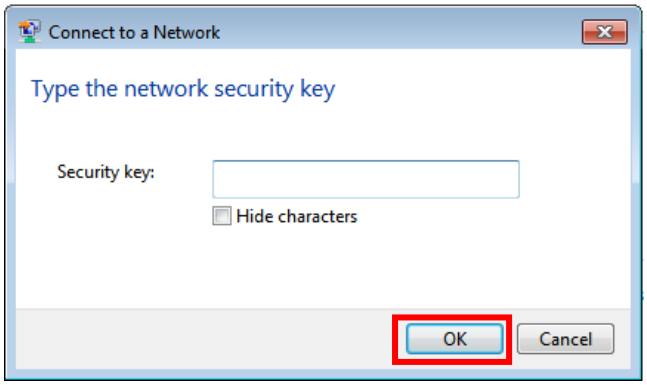
2.4 Connect to Router Wirelessly

You must configure the wireless adapter from your computer in order to establish a wireless connection to the router. In this section, you can find the instructions of how to connect to the router wirelessly with your **Windows 7** computer. You can also refer to the manual of your wireless adapter on how to connect to the router.

Step 1 Click on the wireless icon in the system tray on your desktop. A list of available network will pop up. Select the one you want to connect to and click **Connect**.



Step 2 Enter the key you configured for the router if you have enabled the wireless security, then click **OK**. Or, you can push Easy Setup Button on the router and wireless adapter for wireless security synchronization (Please refer to Section **3.1.3.2** for details) The wireless connection should be now established.

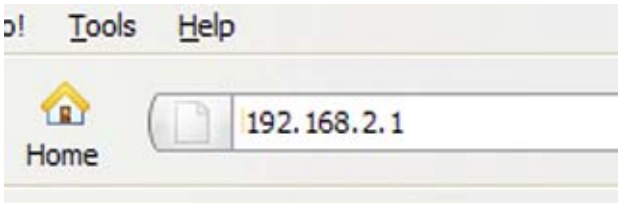


Chapter 3 Advanced Configuration

You can make advanced configurations on this router through Web Configuration Utility to meet your network's needs, such as: Virtual Server, Access Control, Network Security, etc. If you have already gone through the Setup Wizard, you do NOT need to configure anything here for you to start using the Internet.

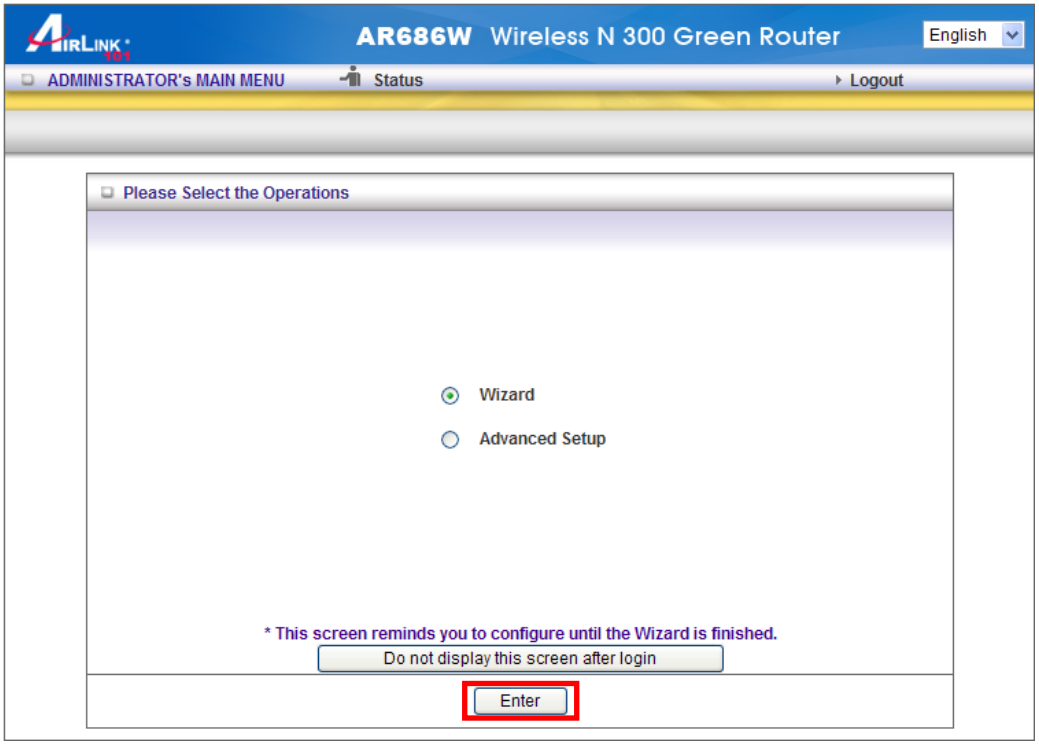
In order to enter the Web Configuration Utility of your router, you need to first log into the router from your web browser. Please follow the steps below:

Step 1 From the computer that is connected to the router, open the web browser (i.e. Internet Explorer or Mozilla Firefox) and type **192.168.2.1** or the IP address you assigned to this router in the address bar and press **Enter**.



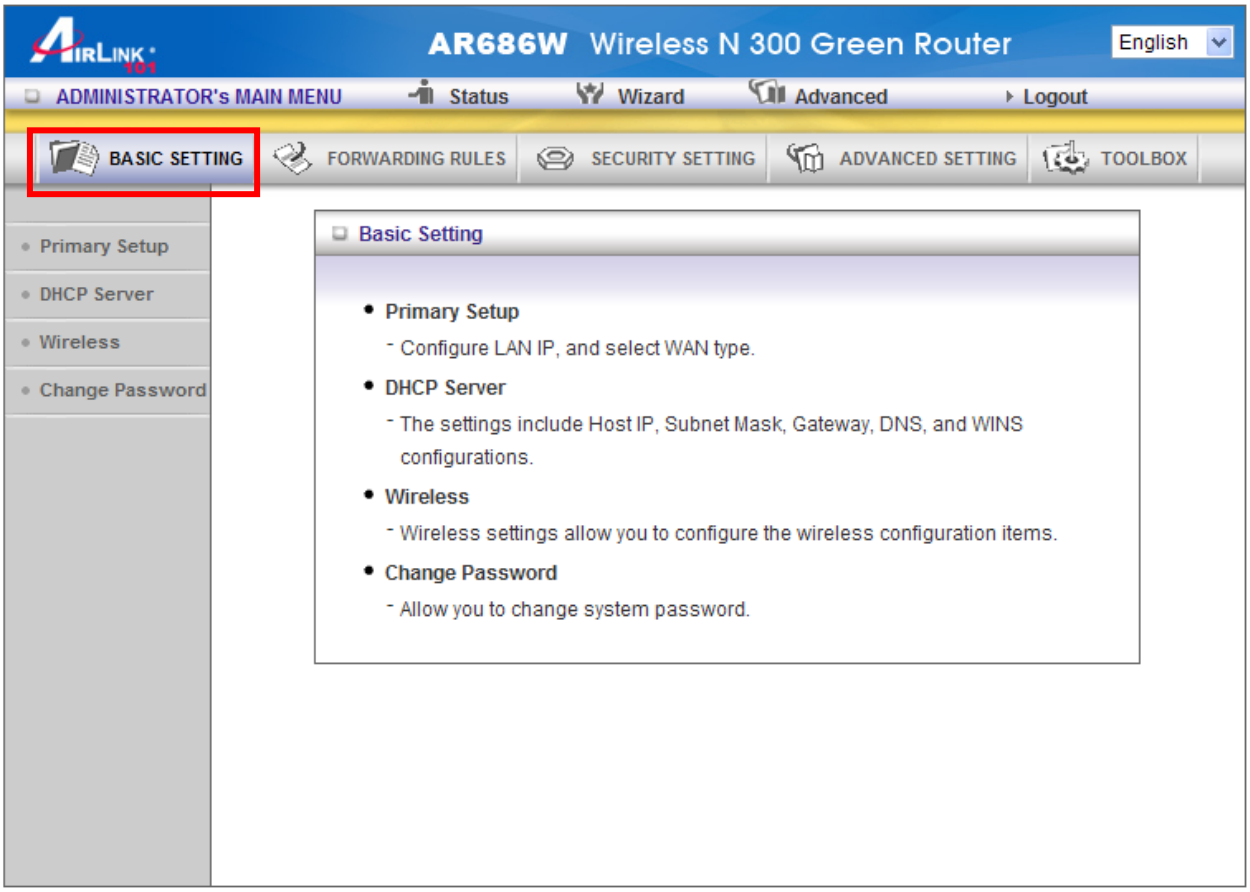
Step 2 Enter the system password and click **Login**. (The default password is "admin".)

Step 3 When you see this page pops up, you have successfully logged in to the router. Select **Advanced Setup** and click **Enter** to access the complete features and settings of this router.



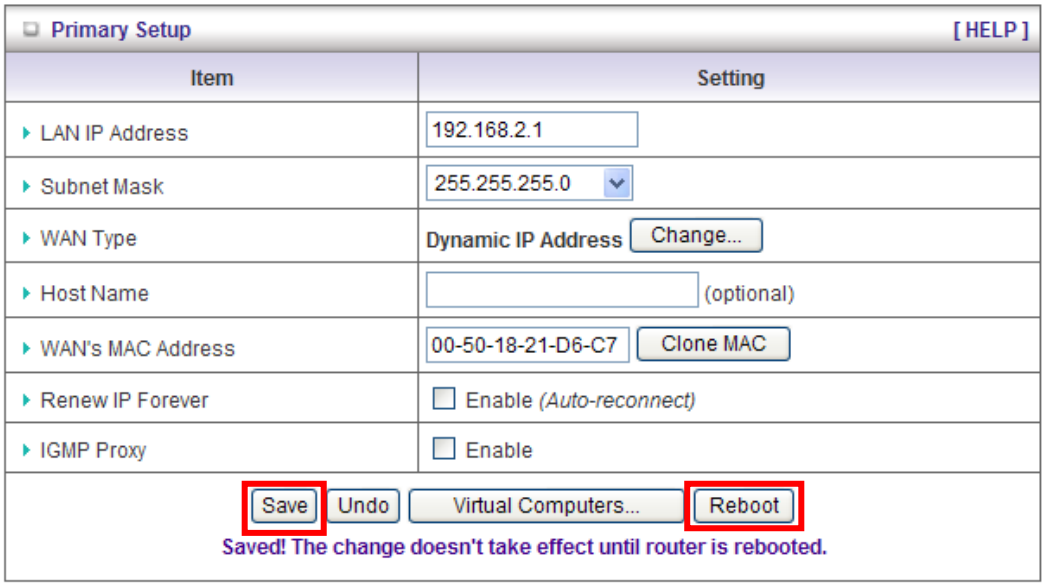
3.1 Basic Setting

You can configure LAN, Internet connection type, DHCP, wireless settings and system password for the router in this page.



3.1.1 Primary Setup

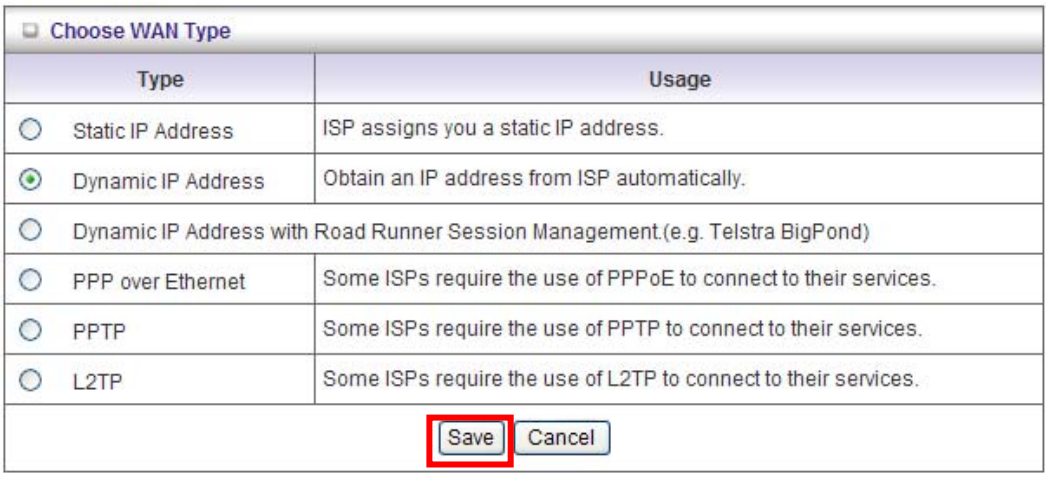
This page allows you to specify an IP address for your router, and configure the Internet connection settings.



Parameter	Description
LAN IP Address	The local IP address of this router. You can change it if necessary.
WAN Type	Displaying the current WAN (Wide Area Network, i.e. Internet) connection type you configured for the router. Click "**Change**" to modify. Please see Section 3.1.1.1. If you are not sure which WAN type you are using, please contact your ISP.
IGMP	The Internet Group Management Protocol (IGMP) is a communications protocol used by hosts and adjacent routers on IP networks to establish multicast group memberships.
Virtual Computers	Please find detailed instructions in Section 3.1.1.2.

3.1.1.1 WAN Type

If you need to change router's WAN type, please click **Change** in the Primary Setup menu. You will see the following page.


Choose WAN Type
Type
Usage
Static IP Address
ISP assigns you a static IP address.
Dynamic IP Address
Obtain an IP address from ISP automatically.
Dynamic IP Address with Road Runner Session Management.(e.g. Telstra BigPond)
PPP over Ethernet
Some ISPs require the use of PPPoE to connect to their services.
PPTP
Some ISPs require the use of PPTP to connect to their services.
L2TP
Some ISPs require the use of L2TP to connect to their services.
Save
Cancel

Select a WAN type from the list and click **Save**.

A. Static IP Address: Click on Static IP Address if your ISP (Internet Service Provider) has provided you a set of IP addresses for your Internet connection.
B. Dynamic IP Address: Click on Dynamic IP if you are connecting to Internet through a cable modem.
C. Dynamic IP Address with Road Runner Session Management: This setting only works when you are using Telstra Big Pond's network service in Australia.
D. PPP over Ethernet (PPPoE): Click on PPP over Ethernet if you are connecting to Internet through a DSL modem.

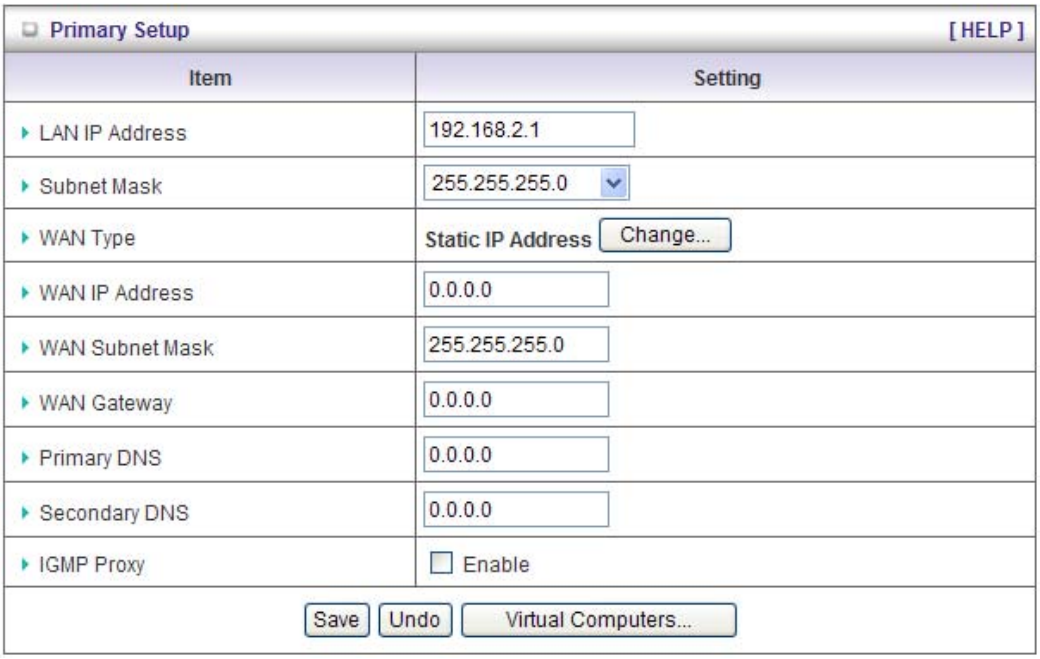
Note: For DSL users, your WAN type is either **Dynamic IP Address** or **PPP over Ethernet**. If you are not sure which one you are using, it is suggested to select PPP over Ethernet for your WAN type, and if you cannot connect to the Internet with this setting, try to select Dynamic IP instead. Otherwise, you can call your ISP to confirm which WAN type you are using.

E. PPTP: Some ISPs require the use of PPTP to connect to their services.
F. L2TP: Some ISPs require the use of L2TP to connect to their services

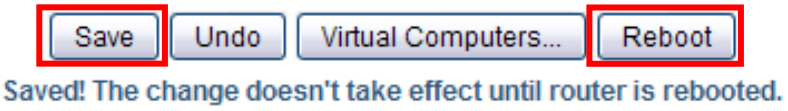
Please see the following instructions for settings of each WAN type:

A) Static IP Address

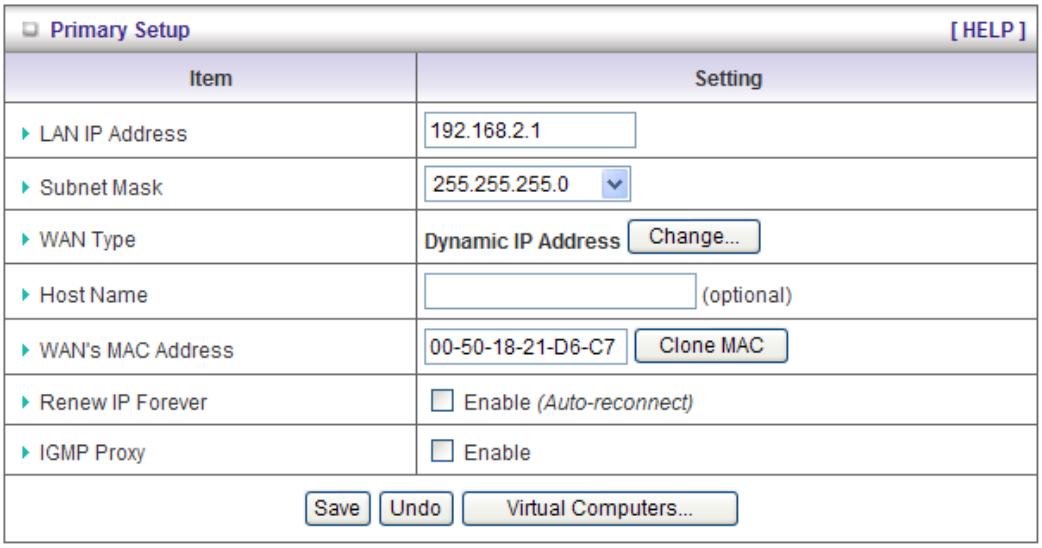
Enter the WAN IP address, WAN Subnet Mask, WAN Gateway, Primary DNS , and Secondary DNS addresses provided by your ISP.



After you've finished all settings, click **Save** to save the settings and click **Reboot**. The change will take effect after rebooting the router.

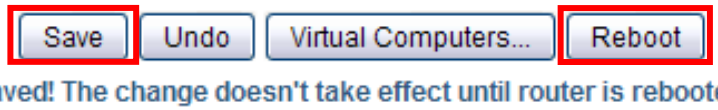


B) Dynamic IP Address



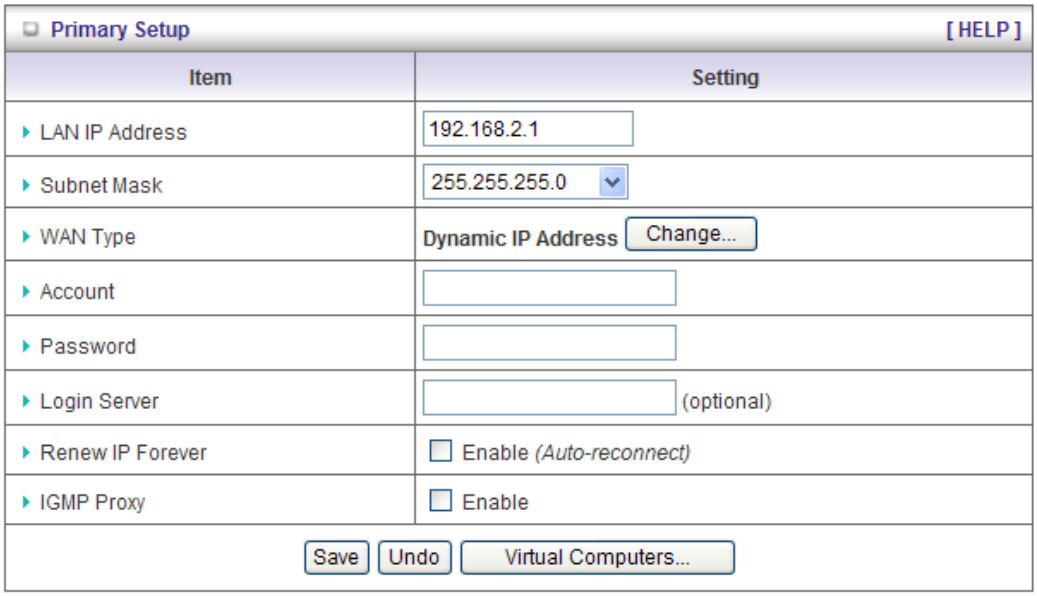
Parameter	Description
Host Name	Please input the host name of your router; this is optional and only required if your service provider asks you to do so.
WAN's MAC Address	Please input MAC address of your computer here if your ISP only permits computer with certain MAC address to access Internet. If you are using the computer which used to connect to Internet via cable modem, you can simply press '**Clone MAC**' button to fill the WAN's MAC address field with the MAC address of your computer.
Renew IP Forever	Check **Enable** to let router reconnect to your ISP when the connection is dropped.

After you've finished all settings, click **Save** to save the settings and click **Reboot**. The change will take effect after rebooting the router.



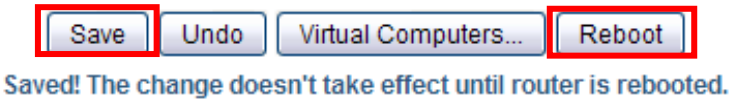
C) Dynamic IP Address with Road Runner Session Management:

Please enter the account and password provided by your Telstra Big Pond ISP.

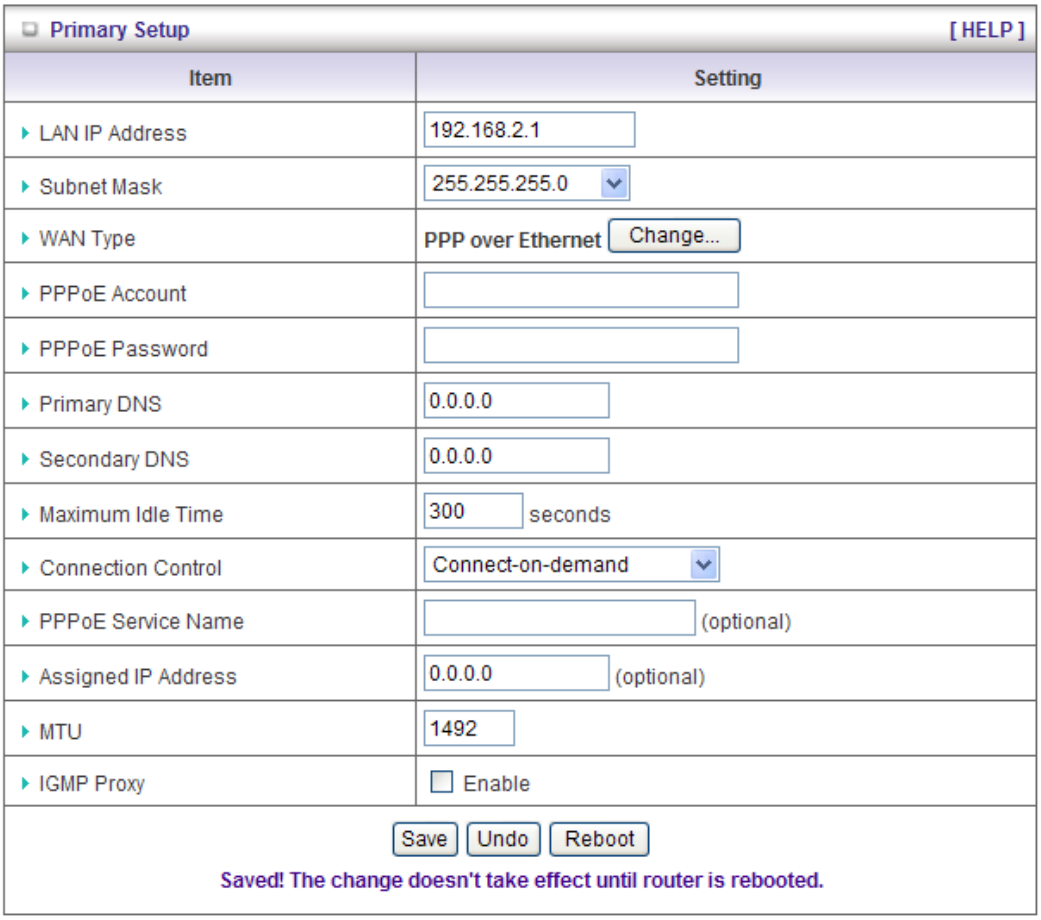


Parameter	Description
Account	Please input user name of your account assigned by Telstra.
Password	Please input the password assigned by Telstra.
Login Server	Please input the IP address of login server here. (Optional)

After you've finished all settings, click **Save** to save the settings and click **Reboot**. The change will take effect after rebooting the router.



D) PPP Over Ethernet (PPPoE)

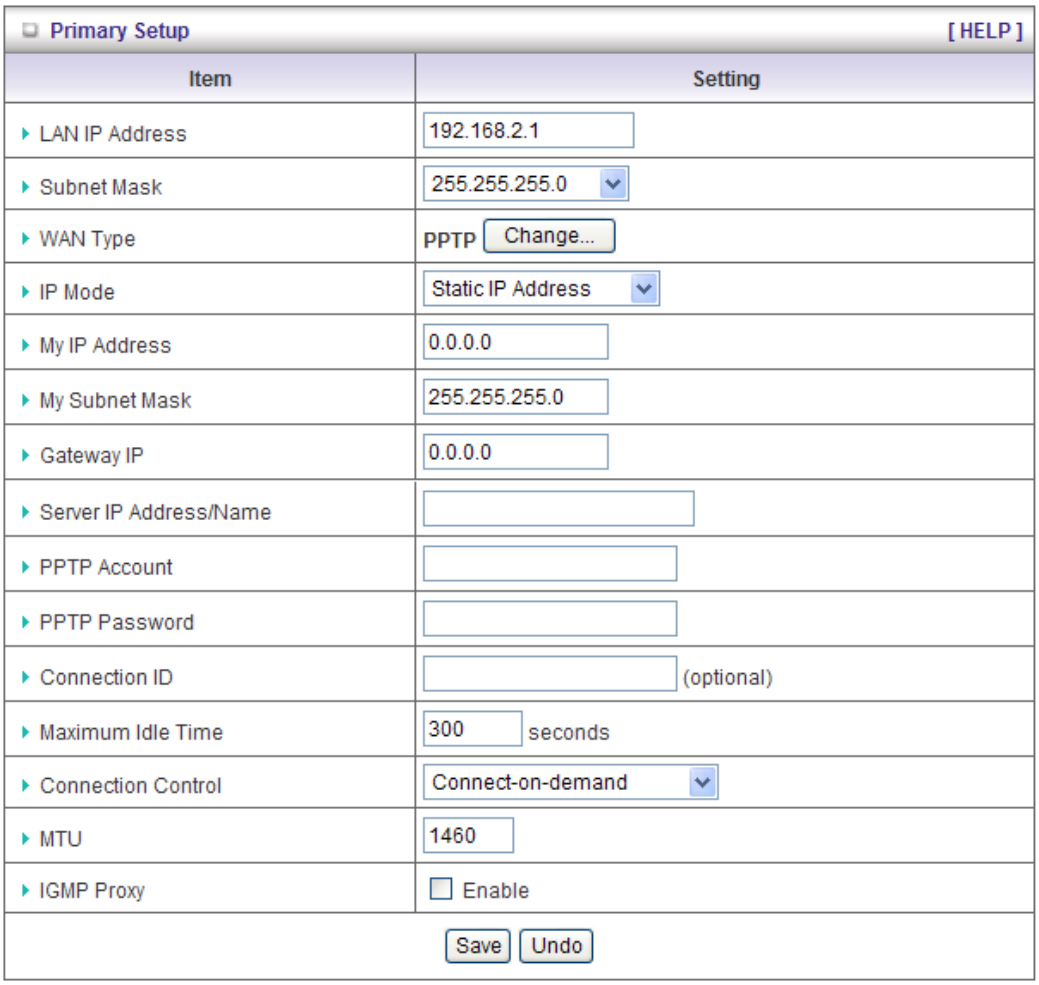


Parameter	Description
PPPoE Account	Enter the User Name for your DSL account, you can obtain this information from your ISP.
PPPoE Password	Enter the Password for your DSL account, you can obtain this information from your ISP.
Primary DNS	This feature allows you to assign a Primary DNS Server. You can obtain this information from your ISP. If your ISP does not provide this information, you can leave it blank.
Secondary DNS	This feature allows you to assign a Secondary DNS Server. You can obtain this information from your ISP. If your ISP does not provide this information, you can leave it blank.
Maximum Idle Time	This feature allows you to set up the amount of time of inactivity before disconnecting your PPPoE session. Set it to zero or

	enable Auto-reconnect to disable this feature.
Connection Control	There are 3 modes for you to control the Internet connection: **Connect-on-demand:** Router will connect to the ISP when its clients send outgoing packets. **Auto Reconnect (Always-on):** Router will keep the connection to the ISP after the connection is established. **Manually:** Router will not connect to the ISP until user clicks the Connect button on the Status-page.
PPPoE Service Name	Enter the DSL service company. This is optional.
Assigned IP Address	Input the IP address you wish to use. This is optional.
MTU (Maximum Transmission Unit)	The most common MTU value is 1492. You can configure it as your ISP suggested.

After you've finished all settings, click **Save** to save the settings and click **Reboot**. The change will take effect after rebooting the router.

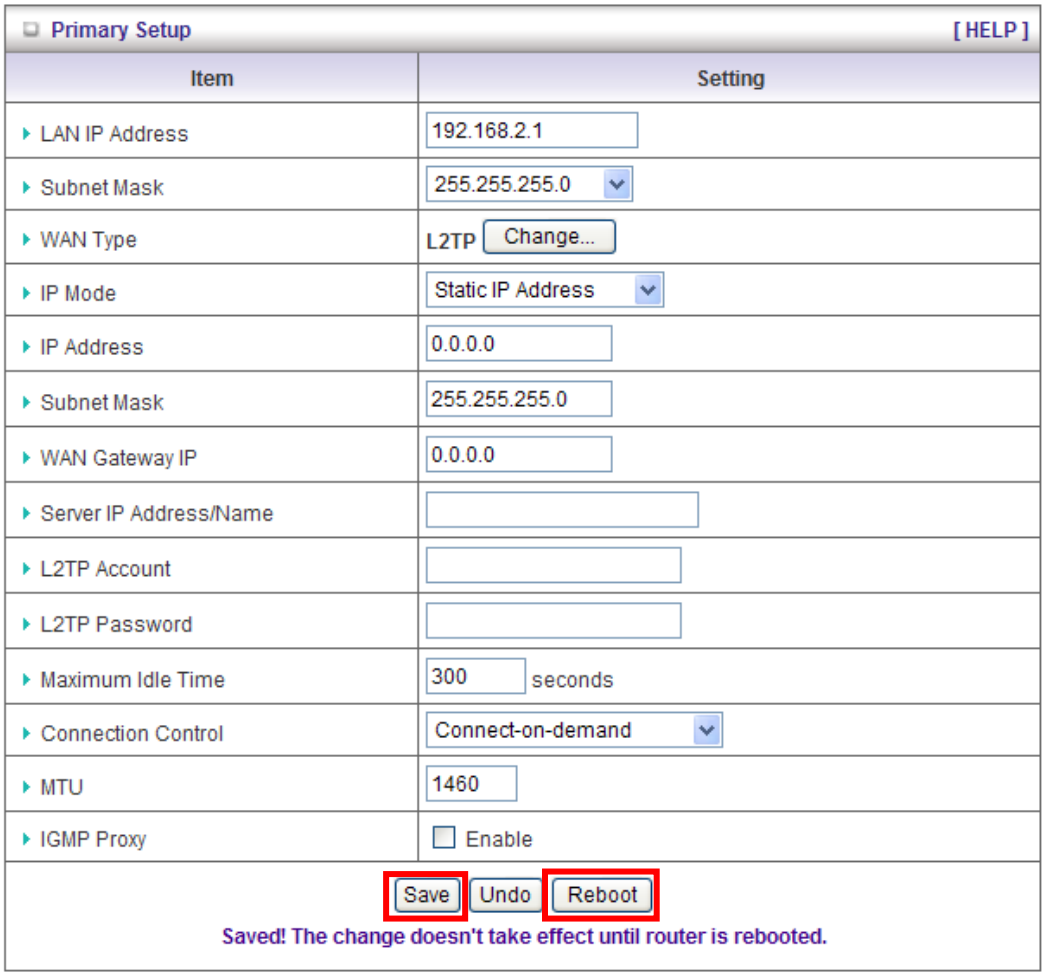
E) PPTP



Parameter	Description
IP Mode	Select the type of how you obtain IP address from your service provider here: Static IP Address or Dynamic IP Address.
My IP Address	Enter the IP address assigned by your ISP if you select Static IP Address.
My Subnet Mask	Enter the Subnet Mask assigned by your ISP if you select Static IP Address.
Gateway IP	Enter the Gateway IP address assigned by your ISP if you select Static IP Address.
Server IP Address/Name	Enter the IP address of the PPTP server.
PPTP Account	Enter the User Name for your PPTP account here. You can

	obtain this information from your ISP.
PPTP Password	Enter the password for your PPTP account here. You can obtain this information from your ISP.
Connection ID	Enter the connection ID if your ISP requires it. This is optional.
Maximum Idle Time	This feature allows you to set up the amount of time of inactivity before disconnecting your PPTP session. Set it to zero or enable “Auto-reconnect” to disable this feature.
Connection Control	There are 3 modes for you to control the Internet connection: **Connect-on-demand:** Router will connect to the ISP when its clients send outgoing packets. **Auto Reconnect (Always-on):** Router will keep the connection to the ISP after the connection is established. **Manually:** Router will not connect to the ISP until user clicks the Connect button on the Status-page.
Maximum Transmission Unit (MTU)	Most ISPs offer MTU value to users. The default MTU value is 0 (auto).

E) L2TP

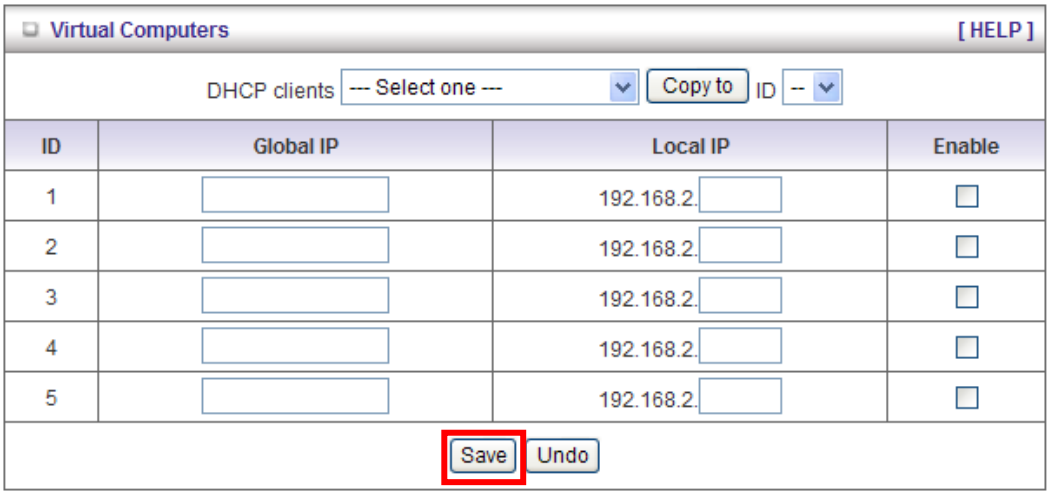


Parameter	Description
IP Mode	Select the type of how you obtain IP address from your service provider here: Static IP Address or Dynamic IP Address.
IP Address	Enter the IP address assigned by your ISP if you select Static IP Address.
Subnet Mask	Enter the Subnet Mask assigned by your ISP if you select Static IP Address.
WAN Gateway IP	Enter the Gateway IP address assigned by your ISP if you select Static IP Address.
Server IP Address/Name	Enter the IP address of the L2TP server.
L2TP Account	Enter the User Name for your L2TP account here. You can obtain this information from your ISP.
L2TP Password	Enter the password for your L2TP account here. You can obtain

	this information from your ISP.
Maximum Idle Time	This feature allows you to set up the amount of time of inactivity before disconnecting your L2TP session. Set it to zero or enable “Auto-reconnect” to disable this feature.
Connection Control	There are 3 modes for you to control the Internet connection: **Connect-on-demand:** Router will connect to the ISP when its clients send outgoing packets. **Auto Reconnect (Always-on):** Router will keep the connection to the ISP after the connection is established. **Manually:** Router will not connect to the ISP until user clicks the Connect button on the Status-page.
Maximum Transmission Unit (MTU)	Most ISPs offer MTU value to users. The default MTU value is 0 (auto).

3.1.1.2 Virtual Computers

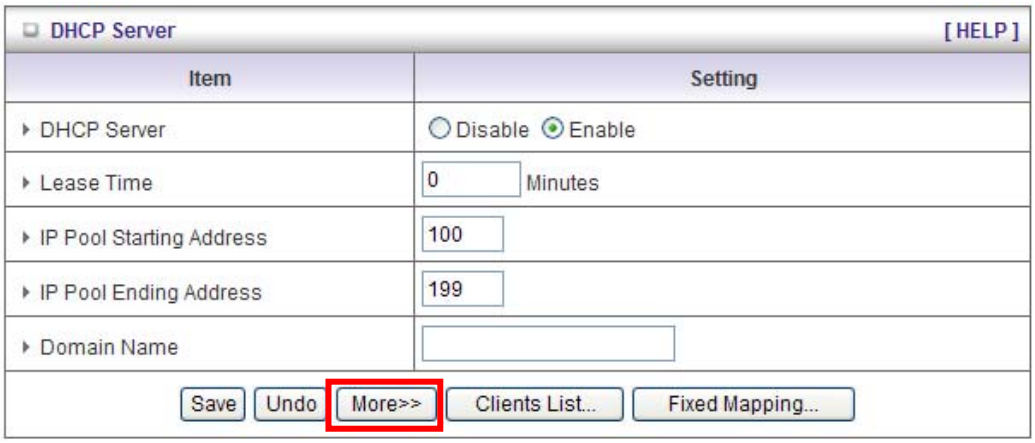
Virtual Computer enables you to use the original NAT feature, and allows you to set up the one-to-one mapping of multiple global IP addresses and local IP addresses.



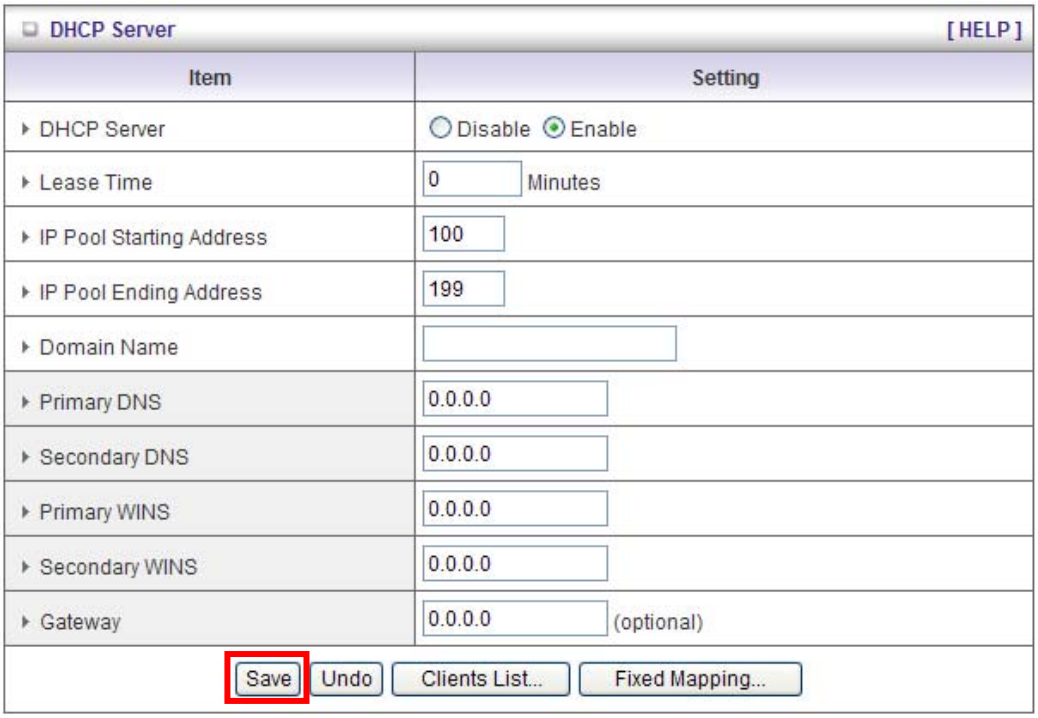
Parameter	Description
Global IP	Enter the global IP address assigned by your ISP.
Local IP	Enter the local IP address (virtual IP address) of your LAN computer corresponding to the global IP address.
Enable	Check Enable box to enable the Virtual Computer mapping rule.

3.1.2 DHCP Server

This page allows you to configure the DHCP settings for your router.



Press button “More>>” for more options.



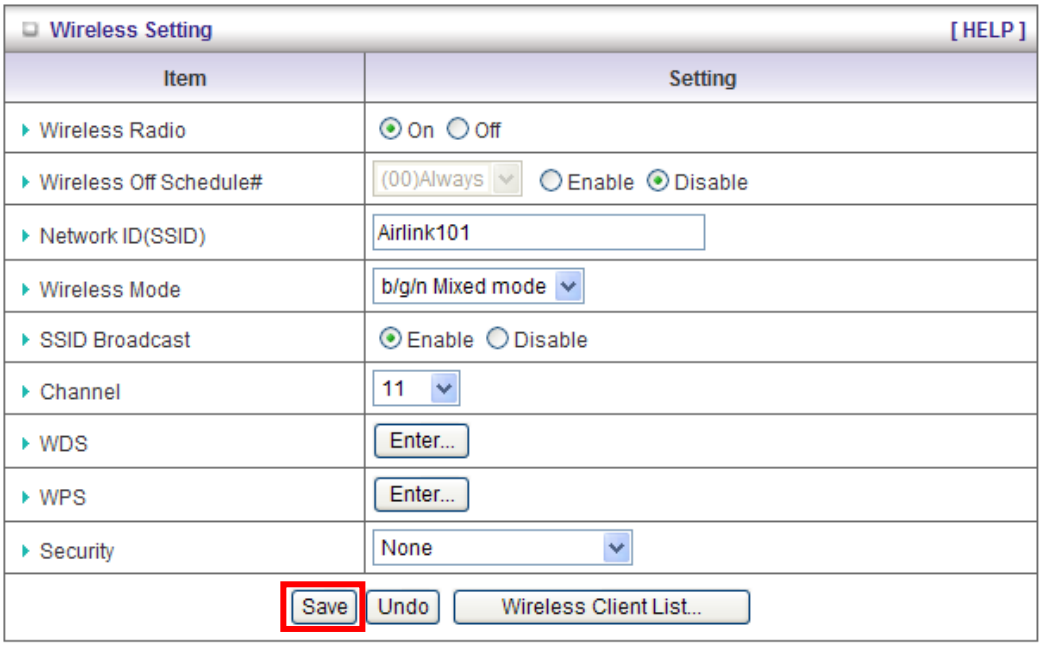
Parameter	Description
DHCP Server	Select Disable or Enable the DHCP server.
Lease Time	This is DHCP dynamic IP lease time assigned to the DHCP clients. Please enter a number between 5 to10080. 10080

	Minutes = 7 days.
IP Pool Starting/Ending Address	Whenever there is a request from a network client, the DHCP server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify a range by entering the starting / ending address of the IP address pool.
Domain Name	This is optional. This information will be passed to the clients.
Primary DNS/Secondary DNS	This is optional. This feature allows you to assign a Primary / Secondary DNS Server.
Primary WINS/Secondary WINS	This is optional. This feature allows you to assign a WINS Server.
Gateway	This is optional. Gateway address can be the IP address of an alternate Router.
Client List	Click on Client List to view DHCP clients.

Click **Save** to save the settings you made.

3.1.3 Wireless

You can set parameters that are used for wireless clients to connect to this router. The parameters include SSID, Channel Number, Encryption, etc.

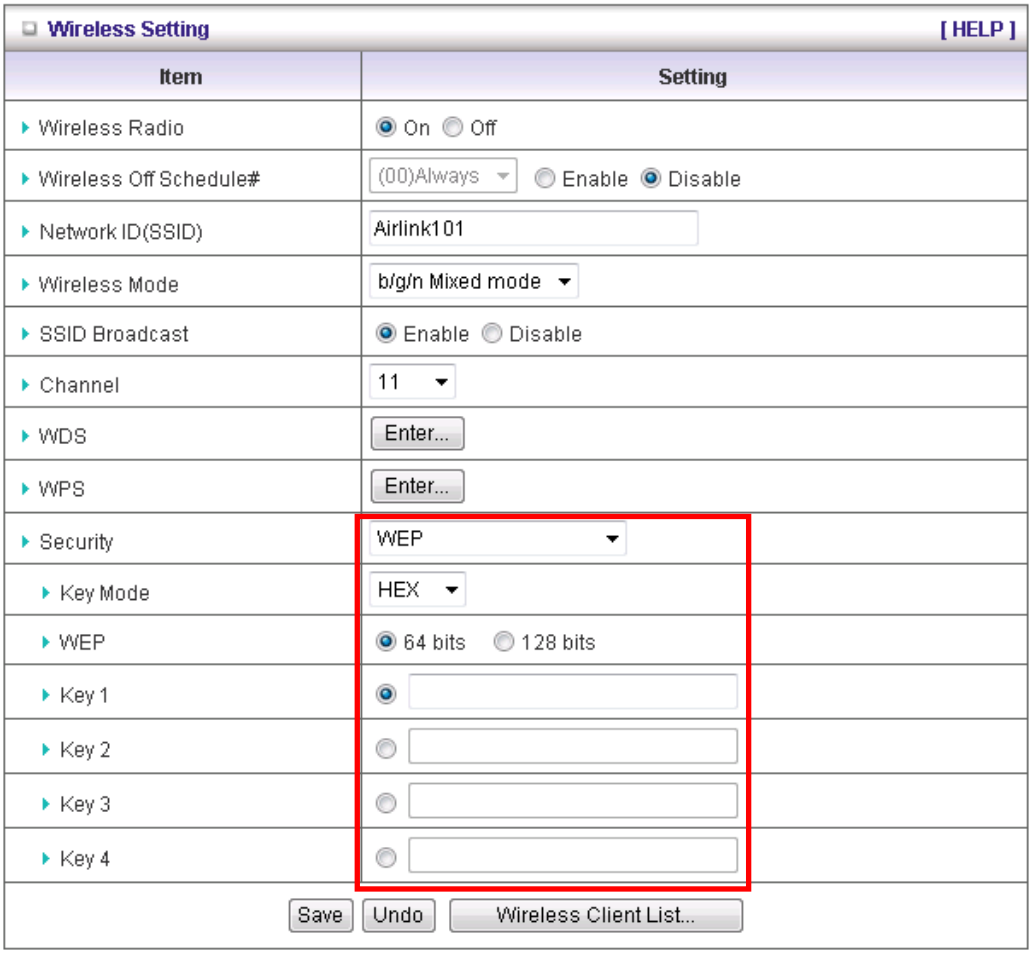


Parameters	Default	Description
Wireless Radio	Enable	Enable or disable wireless function.
Wireless Off Schedule#	Disable	Select a pre-defined schedule rule from the drop-down menu and select Enable, then the router will turn on/off wireless function according to the schedule rule. Please refer to Section 3.4.7 for how to set up the Schedule Rule. Click on Disable to disable this feature if you want to keep wireless function always on.
Network ID (SSID)	Airlink101	This is the name of your wireless network. You can type any alphanumeric characters here, maximum 32 characters. SSID is used to identify your own wireless router from others when there are multiple wireless routers in the same area. It's recommended to change default SSID value to the one that is easy to identify for you, such as "myhome", "office_room1", etc.
Wireless Mode	11b/g/n mixed	Please select the wireless mode from one of the

		following options: 11b/g/n mixed: 2.4GHz band, allows 802.11b, 802.11g, and 802.11n wireless network clients to connect to this router (maximum transfer rate 11Mbps for 802.11b clients, maximum 54Mbps for 802.11g clients, and maximum 300Mbps for 802.11n clients*). 11b Only: 2.4GHz band, only allows 802.11b wireless network clients to connect to this router (maximum transfer rate 11Mbps*). 11g Only: 2.4GHz band, only allows 802.11g wireless network clients to connect to this router (maximum transfer rate 54Mbps*). 11n Only: 2.4GHz band, only allows 802.11n wireless network clients to connect to this router (maximum transfer rate 300Mbps*).
SSID Broadcast	Enable	Select Enable to broadcast the SSID so that your wireless client can detect it on the available wireless network list.
Channel	11	Please select a channel from the drop-down list of 'Channel Number' for broadcasting. You can choose any channel number you want to use.
WDS		Please see 3.1.3.1 for WDS settings.
WPS		Please see 3.1.3.2 for WPS settings.
Security		You can choose None, WEP, 802.1x and RADIUS, WPA-PSK, WPA2-PSK, WPA, WPA2 for encryption mode. The detailed settings will appear after you choose an encryption. Please see below instructions for each Security type for more details.
Wireless Client List		Please see 3.1.3.3 for Wireless Client List information.

Configuring Security - WEP

Note: IEEE802.11n only supports WPA2-PSK or WPA-PSK AES encryption. If you use WEP as your encryption, wireless data rate will drop to 54Mbps (802.11g standard).



Key Mode: Select HEX or ASCII. You can select ASCII (alphanumeric format) or Hexadecimal (in the "a~f" and "0~9" range) for the key format.

WEP: Select 64 bits or 128 bits key length.

Key 1~4: Select a WEP Key you wish to use and enter key value.

If you select HEX and 64 bits, enter a 10-digit Hex key, for example, "12345abcde".

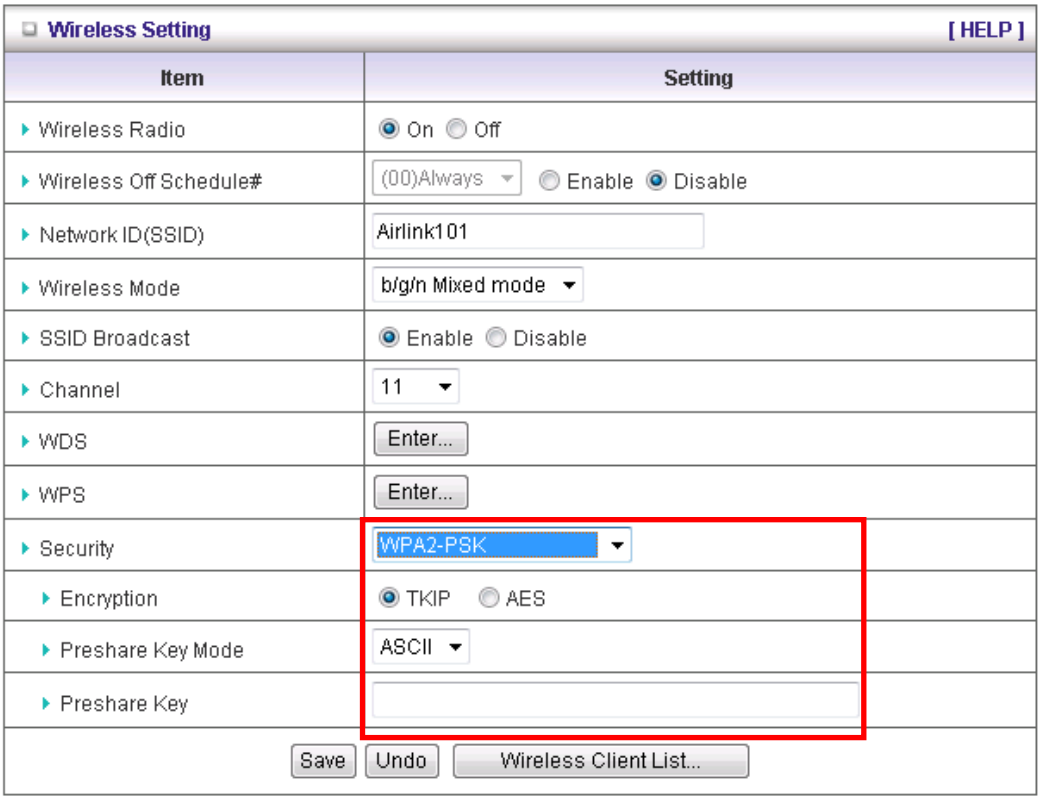
If you select ASCII and 64 bits, enter a 5-digit ASCII key, for example, "xyz01".

If you select HEX and 128 bits, enter a 26-digit Hex key, for example, "12345abcde67890bcdef123456".

If you select ASCII and 128 bits, enter a 13-digit ASCII key, for example, "wepkeyexample".

Configuring Security - WPA-PSK / WPA2-PSK

Wi-Fi Protected Access (WPA) is an advanced security standard. You can use a pre-shared key (PSK) to authenticate wireless stations and encrypt data during communication, so the encryption key is not easy to be broken by hackers. This can greatly improve your wireless security.WPA2-PSK AES is the most secured setting for general users.



Security: Select WPA-PSK or WPA2-PSK

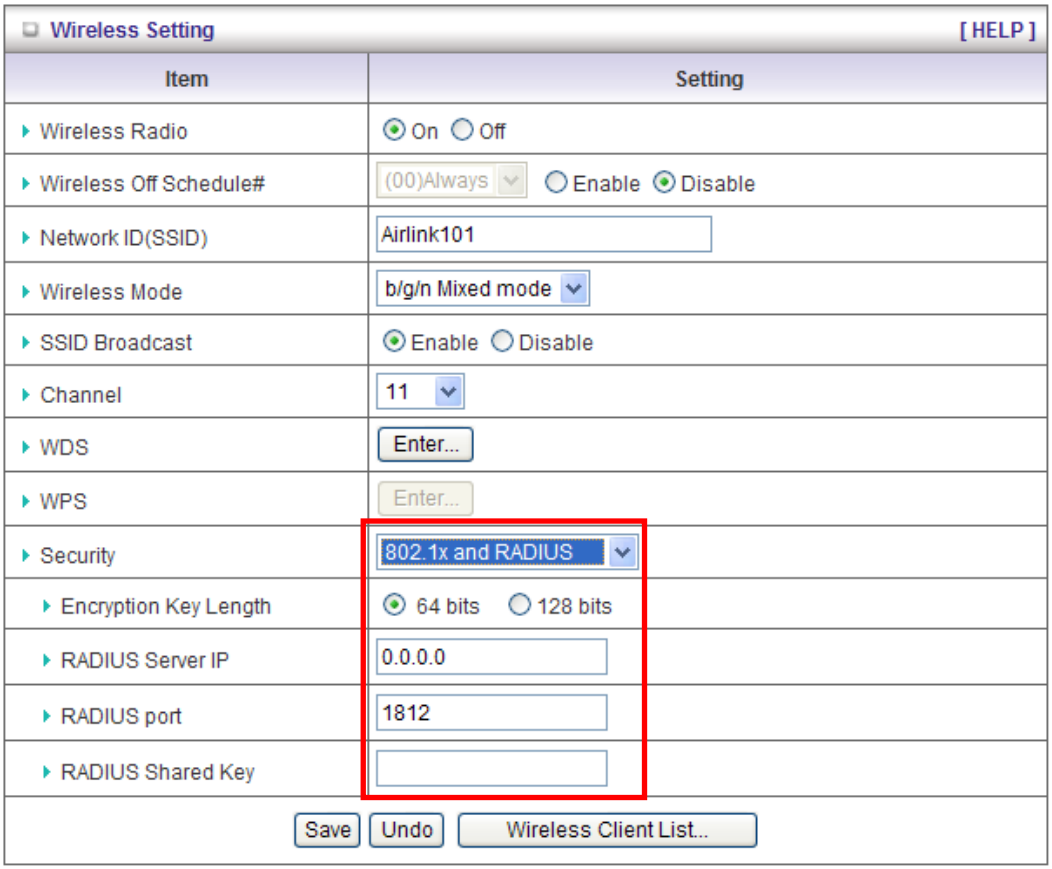
Encryption: Select either AES or TKIP. It is suggested to select AES if all your wireless devices support this encryption mode.

Note: IEEE802.11n only supports AES encryption. If you use TKIP as your encryption, wireless data rate will drop to 54Mbps (802.11g standard).

Preshare Key: Enter 8~63 characters as the security key of your wireless network.

Configuring Security – 802.1x and RADIUS

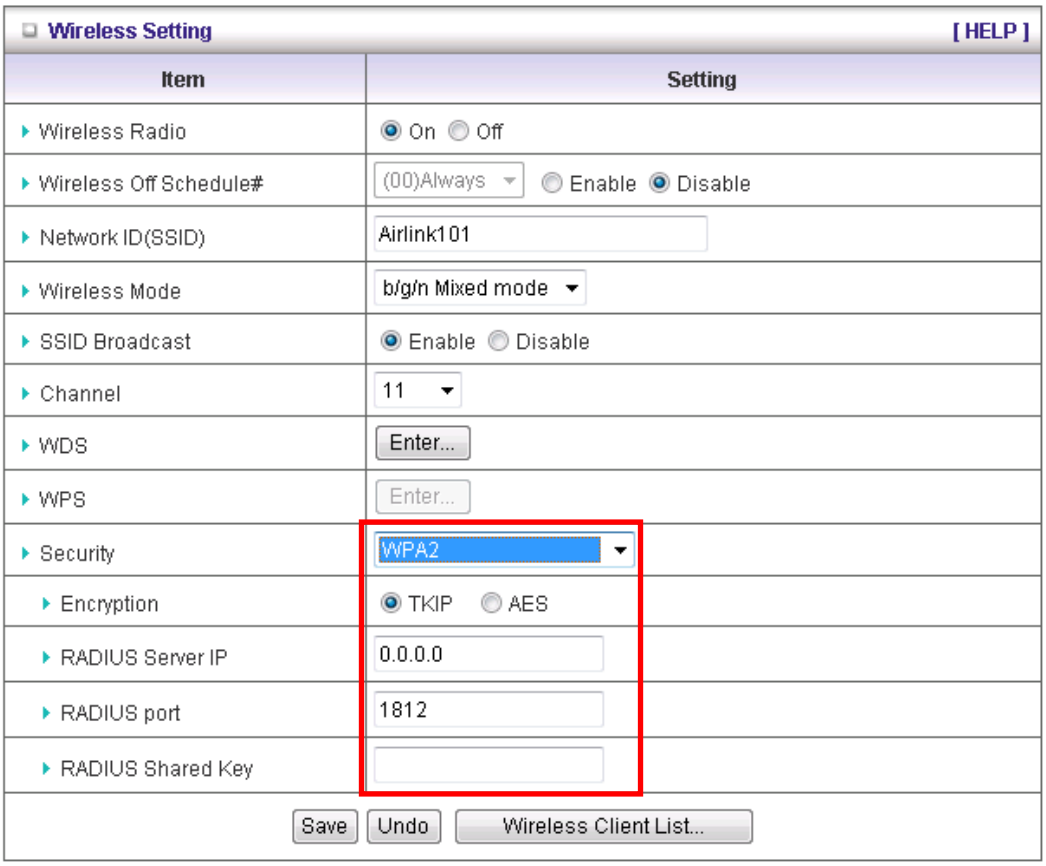
When the 802.1x function is enabled, wireless users must authenticate this router first to use the network service. The most common method of implementing 802.1x is by having a RADIUS Server (contain an authentication database) on your LAN, so the router can work simultaneously with it and get user's authentication profile for comparison.



Encryption Key Length: You can select either 64 bits or 128 bits.
RADIUS Server IP: The RADIUS server's IP address.
RADIUS port: The RADIUS server's service port.
RADIUS Shared Key: Key value shared by the RADIUS server and this router. This key value should be consistent with the one in the RADIUS server.

Configuring Security - WPA / WPA2

Wi-Fi protected Access (WPA) is designed to improve data protection and implement access control for Wireless LAN system. It encrypts frames transmitted through wireless module using the key dynamically obtained from RADIUS Server.



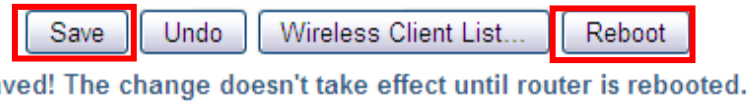
Encryption: Select either AES or TKIP. It is suggested to select AES if all your wireless devices support this encryption mode.

RADIUS Server IP: The RADIUS server's IP address.

RADIUS port: The RADIUS server's service port.

RADIUS Shared Key: Key value shared by the RADIUS server and this router. This key value should be consistent with the one in the RADIUS server.

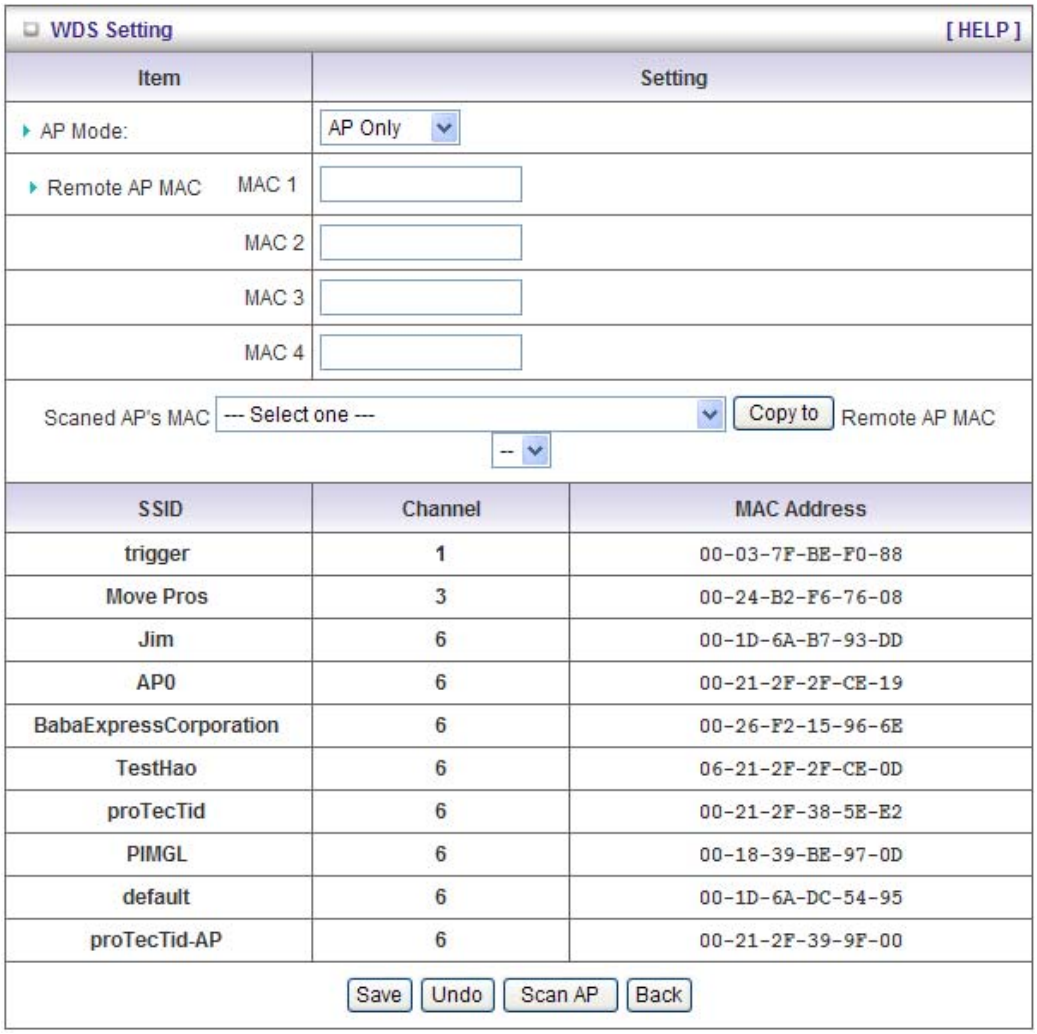
After you finished all settings, click **Save** to save the settings and click **Reboot**. The change will take effect after rebooting the router.



3.1.3.1 WDS

The Wireless Distribution System (WDS) provides wireless point-to-point, and point-to-multipoint bridging for deployment over large area. With the WDS feature, the Wireless LAN coverage can be easily extended.

Note: WDS-enabled routers or APs from different manufacturers are not guaranteed to work with AR686W. It is recommended to deploy WDS with solely Airlink101® AR686W. When WDS is enabled, it only supports None and WEP encryption.



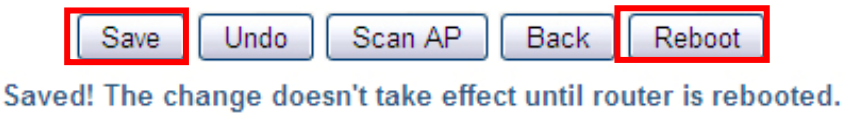
Before you set up WDS bridging:

1) Make sure your wireless computer can associate with individual router/AP.
2) Configure the same channel for every router/AP.

3) Configure a unique different SSID for every router/AP in order to distinguish each unit on your wireless LAN.
4) Configure a static IP address for every router/AP. Make sure all IP addresses are based on the same subnet mask, and out of your DHCP client range.

Parameters	Description
AP Mode	**AP Only**: WDS function is disabled. **WDS Only**: The router is functioning as a bridge to connect with other WDS enabled AP/Router. Wireless client is not able to connect to the router at WDS Only mode. **Hybrid**: The router is functioning as a bridge as well as an AP that allows wireless client association at the same time. (Note: the data throughput is halved with Hybrid mode.)
Remote AP MAC	Enter the MAC address of other WDS enabled AP/Router into MAC 1 ~ MAC4. This feature allows you to bridge up to 4 AR686W routers. It is suggested to use “Copy to” function to avoid any typo.
Scanned AP’s MAC	Click on the drop-down menu to select a AP you wish to bridge to, select a number from the drop-down menu of Remote AP MAC and click **Copy to**, the MAC address will be automatically filled into the corresponding MAC address field above.
Scan AP	Click Scan AP to find the available wireless Router/AP that you wish to bridge. If the wireless router/AP is not showing in the list, it may be out of range, and you need to move it closer in order to build the bridge connection.

After you finished all settings, click **Save** to save the settings and click **Reboot**. The change will take effect after rebooting the router.



3.1.3.2 Easy Setup Button (WPS™ compatible)

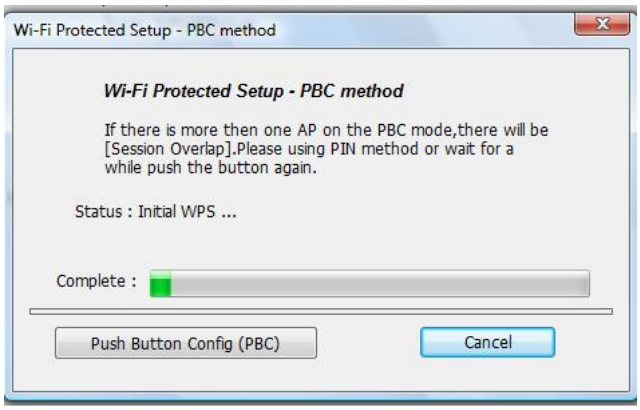
The AR686W Wireless N 300 Green Router has a built-in Easy Setup Button (WPS™ compatible) which allows you to build secured wireless connection between your wireless adapters and the router quickly and easily. **Please make sure your wireless device supports this feature as well.** If not, you will need to set up the wireless security manually and you can skip this section.

In the instructions below, we are going to use the AWLL6077v2 Airlink101® Wireless N 300 USB Adapter as an example.

Note: You may have different wireless adapter installed in your computer. You can refer to the user's manual from the manufacturer. Different adapters have different ways to trigger WPS configuration.

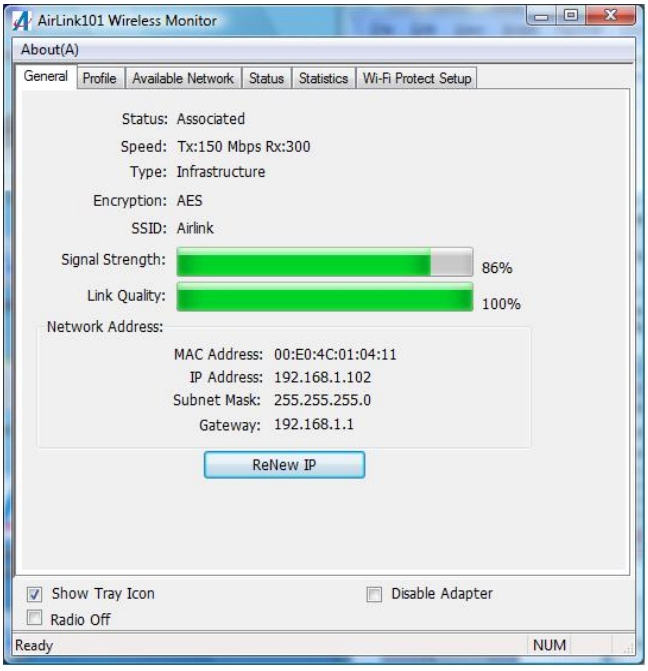
Step 1 Connect wireless USB adapter to your computer with installed driver.

Step 2 Push and hold the Easy Setup Button on the Adapter until you see the following window pops up on the screen.

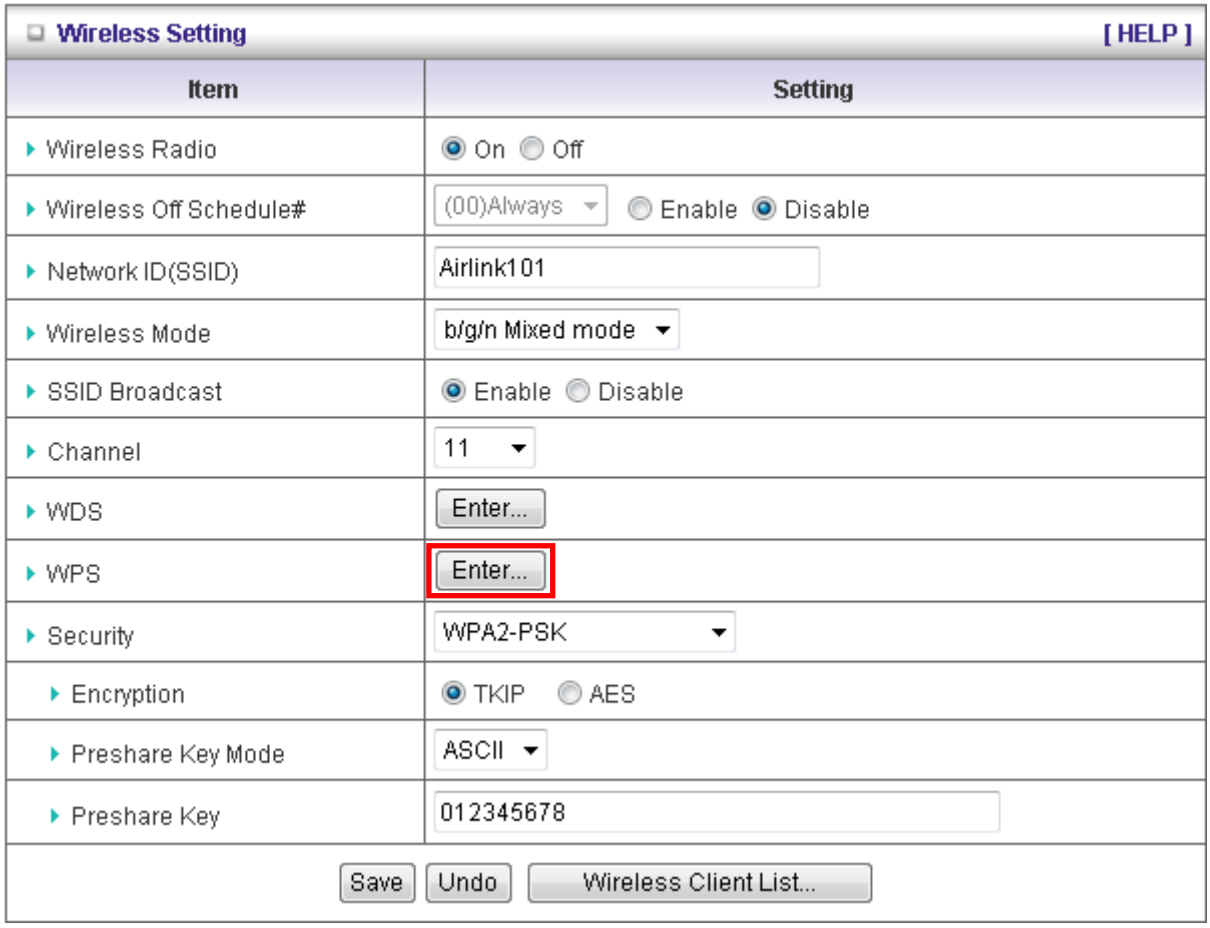

Wi-Fi Protected Setup - PBC method
Wi-Fi Protected Setup - PBC method
If there is more then one AP on the PBC mode,there will be [Session Overlap].Please using PIN method or wait for a while push the button again.
Status : Initial WPS ...
Complete :
Push Button Config (PBC)
Cancel

Step 3 Within the following 1 minute, push the WPS Button on the Router and hold for less than 1 second. The wireless LED will start blinking quickly.

Step 4 The Router will now start the handshake with the wireless adapter, which will take about 30 seconds. When you see the window similar to the one below, the connection has been established.

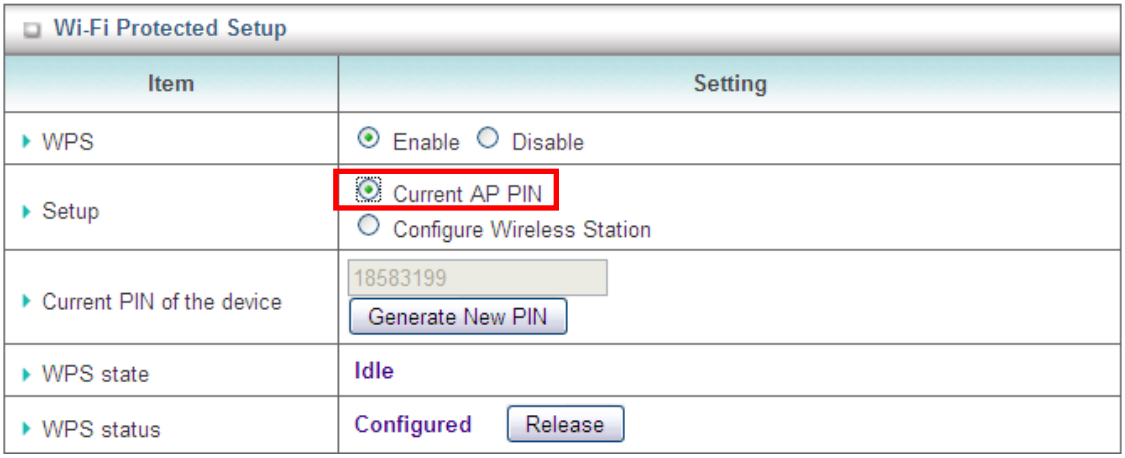


To configure the WPS settings of the router, go to **Advanced > Basic Setting > Wireless**, and click on **WPS "Enter"** button.

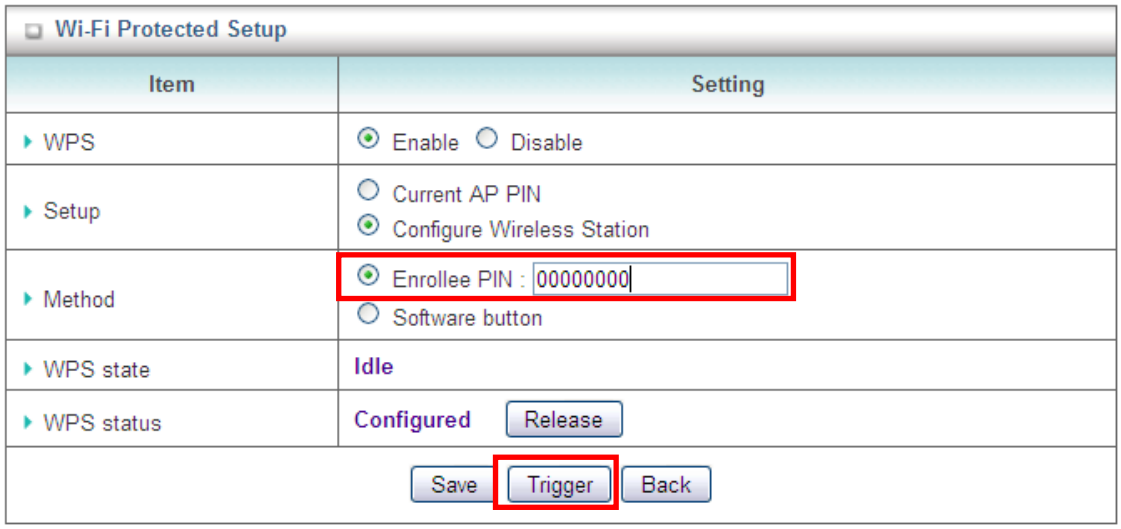


There are two methods to activate WPS – PIN and PBC.

1) PIN (Personal Identification Number) You can check "Current AP PIN" and enter the numbers generated by this router displaying in "Current PIN of the device" to the wireless client computer.

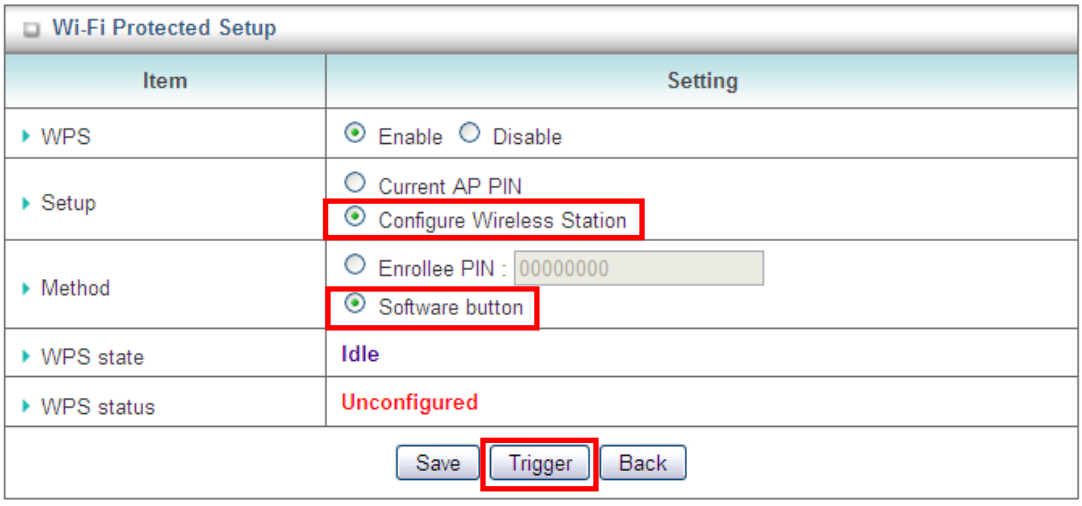


Or, you can check “Configure Wireless Station”, and enter the PIN generated by the wireless client computer into **Enrollee PIN**, and then click **Trigger** button to start WPS.



2) PBC (Push Button Configuration)

You can choose to press the hardware button on the front panel of the router, or select Configure Wireless Station, Software button, and click **Trigger** button to start WPS.

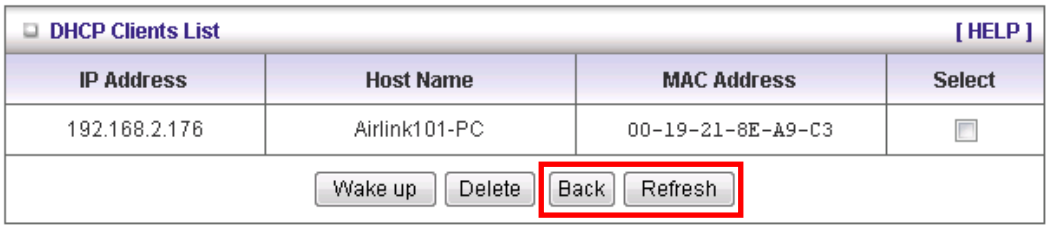


Parameters	Description
WPS	Select Enable or Disable WPS function.
WPS State	It displays “Idle” when there is no WPS session going on, “Processing” when WPS is in progress, or “Complete” when WPS is finished.
WPS Status	It displays “Configured” if WPS setup is successful, or “Unconfigured” if WPS setup fails.

Click **Save** after you’ve finished all settings.

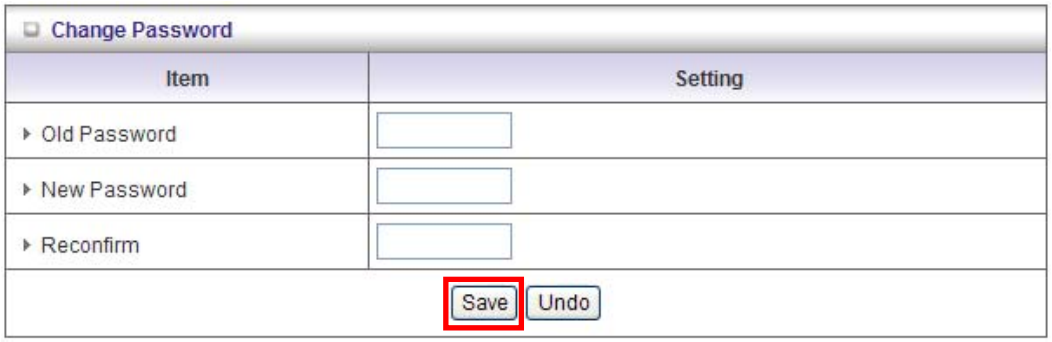
3.1.3.3 Wireless Client List

This table displays the wireless clients that are currently associated to the router. You can click **Back** to go back to the Wireless page, or click **Refresh** to refresh the list.



3.1.4 Change Password

You can change the password required to log into the Router's web configuration utility. The default password is "admin". It is suggested to change the administrator's default password as soon as you start to use the Router, and store it in a safe place. The password consists of 0 to 9 alphanumeric characters, and is case sensitive

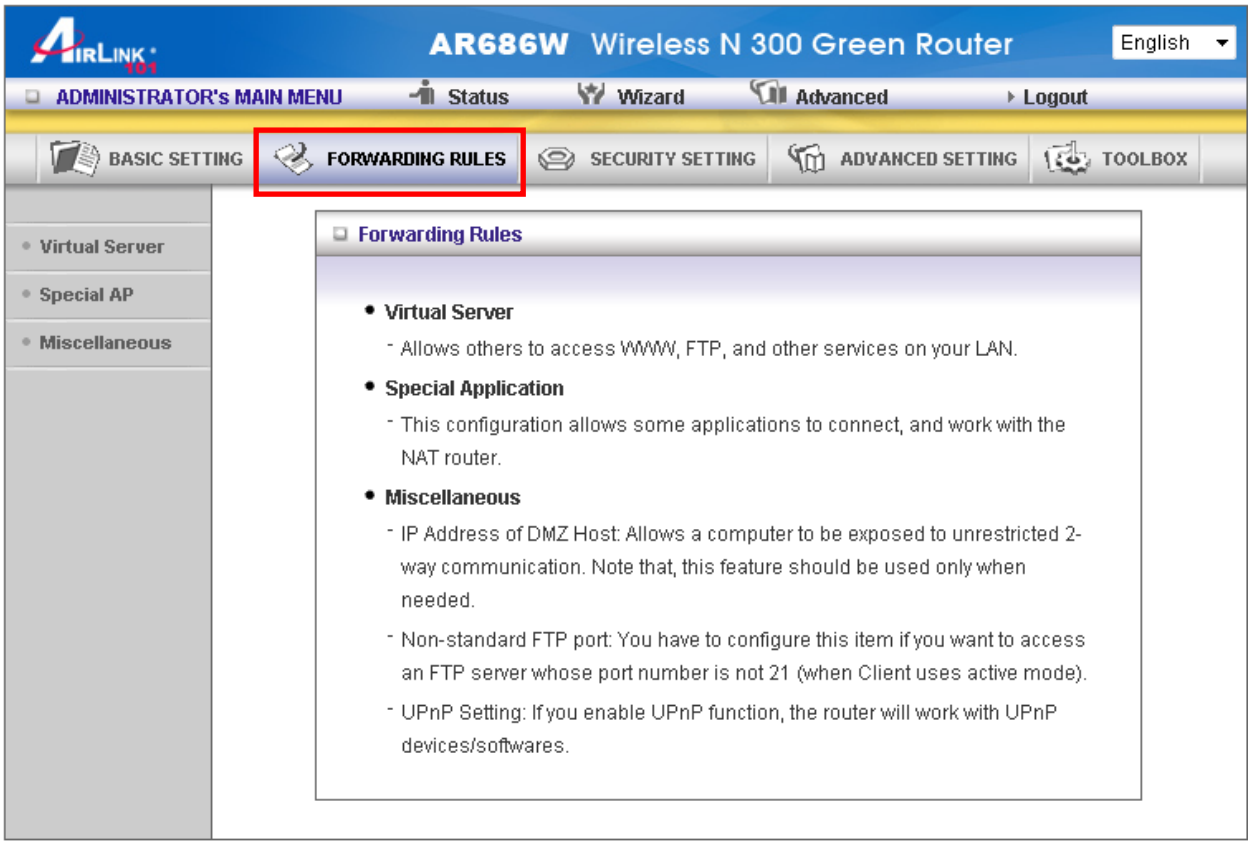


Parameters	Description
Old Password	Enter the current password of the router.
New Password	Enter the new password.
Reconfirm	Enter the new password again for verification purposes. **Note**: If you forget your password, you'll have to reset the router to the factory default (the default password is 'admin') by pushing and holding the WLAN/Reset button on the front panel of the router for 4 seconds.

Click **Save** after you've finished all settings.

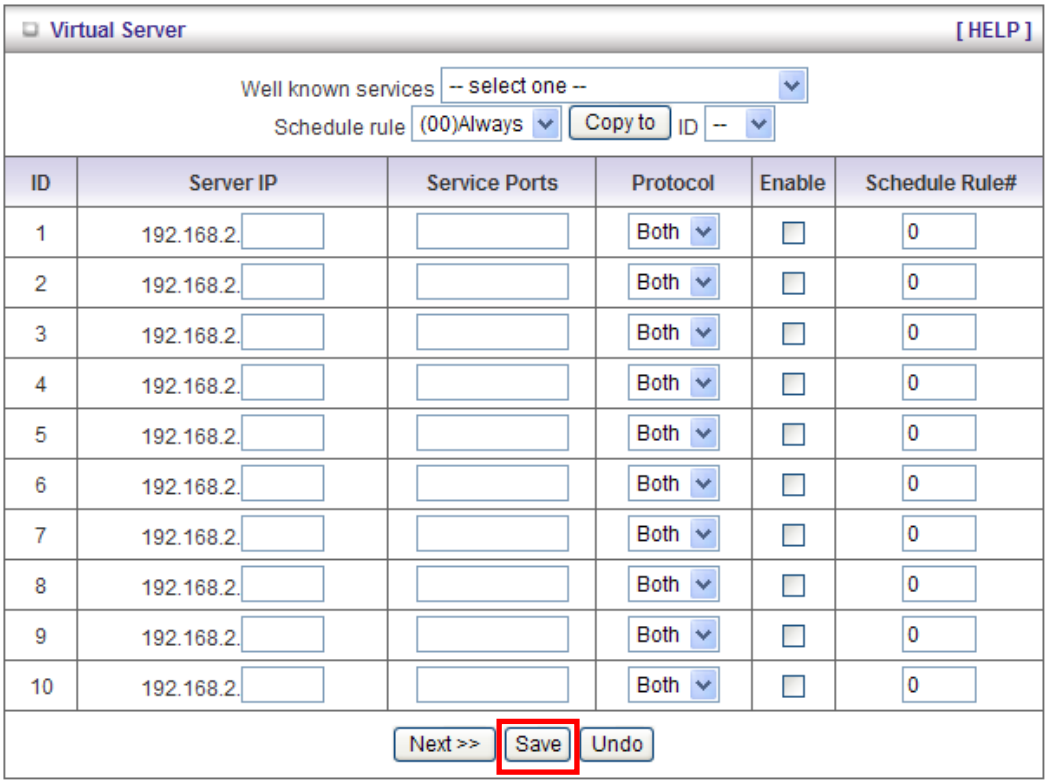
3.2 Forwarding Rules

You can configure Virtual Server, Special IP and Miscellaneous settings in this page.


AIRLINK 101
AR686W Wireless N 300 Green Router
English
ADMINISTRATOR's MAIN MENU
Status
Wizard
Advanced
Logout
BASIC SETTING
FORWARDING RULES
SECURITY SETTING
ADVANCED SETTING
TOOLBOX
Virtual Server
Special AP
Miscellaneous
Forwarding Rules
Virtual Server
Allows others to access WWW, FTP, and other services on your LAN.
Special Application
This configuration allows some applications to connect, and work with the NAT router.
Miscellaneous
IP Address of DMZ Host: Allows a computer to be exposed to unrestricted 2-way communication. Note that, this feature should be used only when needed.
Non-standard FTP port: You have to configure this item if you want to access an FTP server whose port number is not 21 (when Client uses active mode).
UPnP Setting: If you enable UPnP function, the router will work with UPnP devices/softwares.

3.2.1 Virtual Server

If you want to host a HTTP/FTP server or allow remote access to your IP camera on the LAN from the Internet, you must set up port forwarding rules on the router in order to direct incoming traffic to the server or IP Camera. This page allows you to set up to 20 port forwarding rules for the specified applications.



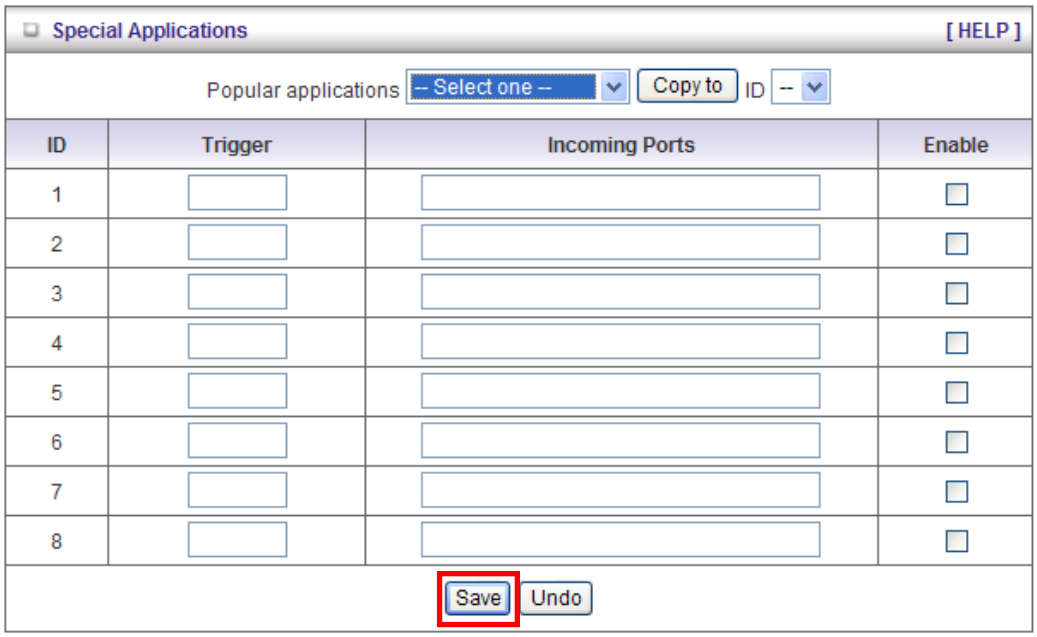
Parameter	Description
Well known services	You can select a pre-defined service from the list of well known services, select a schedule rule, and the ID you wish to fill the settings in. Click **Copy to** and the settings you selected will be filled into the specific ID.
Server IP	This is the private IP address of the server behind the NAT firewall. Note: You must give your LAN client a fixed/static IP address for Virtual Server to work properly.
Service Ports	The range of ports to be forwarded to the Server IP. You can fill in a single port, such as 21, 80 or a range, such as 2000-2999.
Protocol	This is the protocol type to be forwarded. You can choose to forward “TCP” or “UDP” packets only or select “Both” to forward both “TCP” and “UDP” packets.

Enable	Check to enable this forwarding rule.
Schedule Rule#	Enter a Schedule Rule number to enable the forwarding rule only within the desired time frame. Please refer to ***3.4.7 Schedule Rule*** for detailed setting instructions. You can set 0 to enable the forwarding rule always. If you assign a schedule rule (for example, 9am to 5pm) to ID#1, users are only allowed to access the FTP server from 9am to 5pm.
Next>> / Previous<<	Access the next/previous 10 port forwarding rules.

Click **Save** after you've finished all settings.

3.2.2 Special Applications

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications cannot work when Network Address Translation (NAT) is enabled. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger" field, and then enter the public ports associated with the trigger port to open them for inbound traffic. The range of the Trigger port is from 1 to 65535.



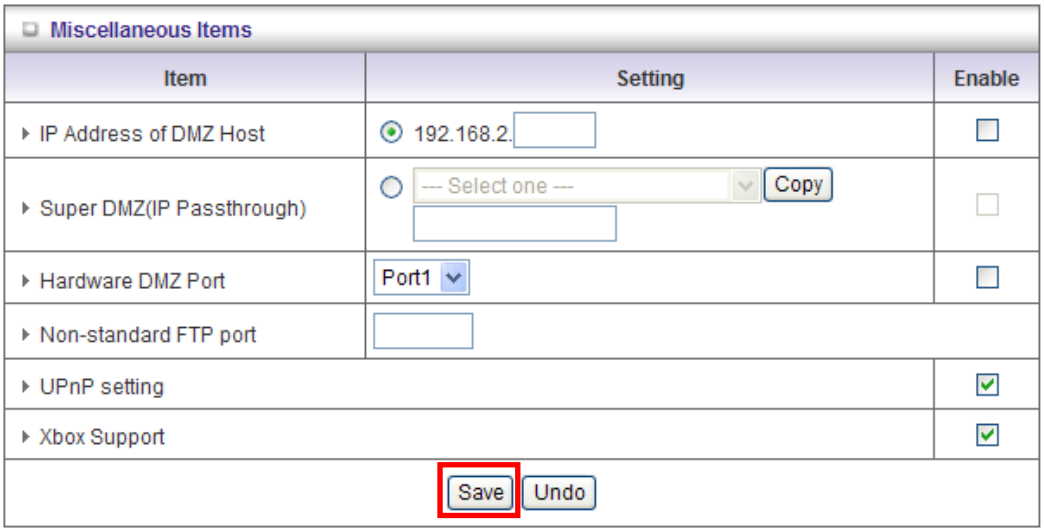
Parameter	Description
Popular applications	You can select a pre-defined application from the list of Popular

	applications, and the ID you wish to fill the setting in. Click **Copy to** and the setting you selected will be filled into the specific ID.
Trigger	Enter an outbound port number assigned by the application.
Incoming Ports	When the trigger packet is detected, the inbound packets to the specified port numbers are allowed to pass through the NAT firewall, type in a range of incoming ports to be triggered, for instance, “5000-5300” or “9091, 9093-9100”. It depends on the special application’s requirement.
Enable	Check to enable this Special Application rule.

Note: Only one PC can use each Special Application tunnel at same time.
*If the mechanism of Special Applications fails to make an application work, try setting your computer as the **DMZ** host instead, please refer to Section **3.2.3 Miscellaneous** for details .*
Click **Save** after you finished all settings.

3.2.3 Miscellaneous

If you have a local client PC that cannot run an Internet application (e.g. Games) properly from behind the NAT firewall, then you can open the client up to unrestricted two-way Internet access by defining a DMZ Host. The DMZ function allows you to re-direct all packets going from your WAN port IP address to a particular IP address in your LAN. You can configure DMZ at this page, as well as UPnP and other settings.



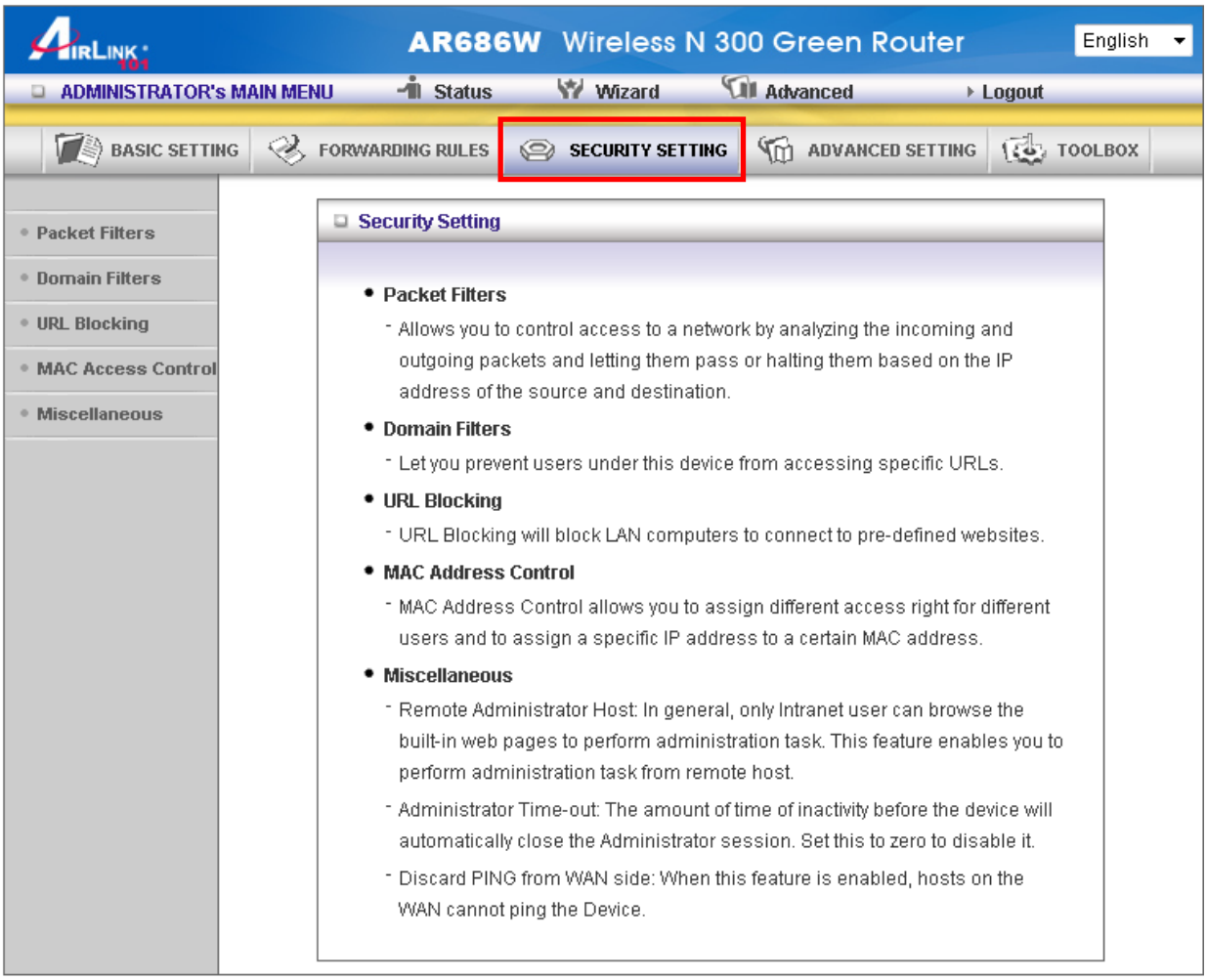
Parameter	Description
IP Address of DMZ Host	Enter the local IP address that you wish to open DMZ. If the

	application still doesn't work on your computer after you open DMZ, you can try to enable Super DMZ for that computer.
Super DMZ (IP Passthrough)	Select Super DMZ when your computer or server on the Local Area Network needs to allow access from the Internet with a real public IP address. With IP Passthrough configured, all IP traffic, not just TCP/UDP, is forwarded back to the host computer. This can be necessary with certain types of software that do not function reliably through Network Address Translation.
Hardware DMZ Port	This feature allows the device to get Global IP from ISP directly. Some device like STB or MOD works via assigned Port.
Non-standard FTP Port	Enter the FTP port number if the FTP server's port you try to access is not 21.
UPnP	Check the Enable box to enable UPnP feature. After you enable the UPnP feature, all client systems that support UPnP, like Windows 7, can discover this router automatically.
Xbox Support	Xbox is a video game console produced by Microsoft Corporation. Check the Enable box to enable Xbox Support feature

Click **Save** after you've finished all settings.

3.3 Security Setting

You can configure Internet access rules for your local computers based on Packet Filters, Domain Filters, URL Blocking, MAC Access Control and Miscellaneous settings in this page.

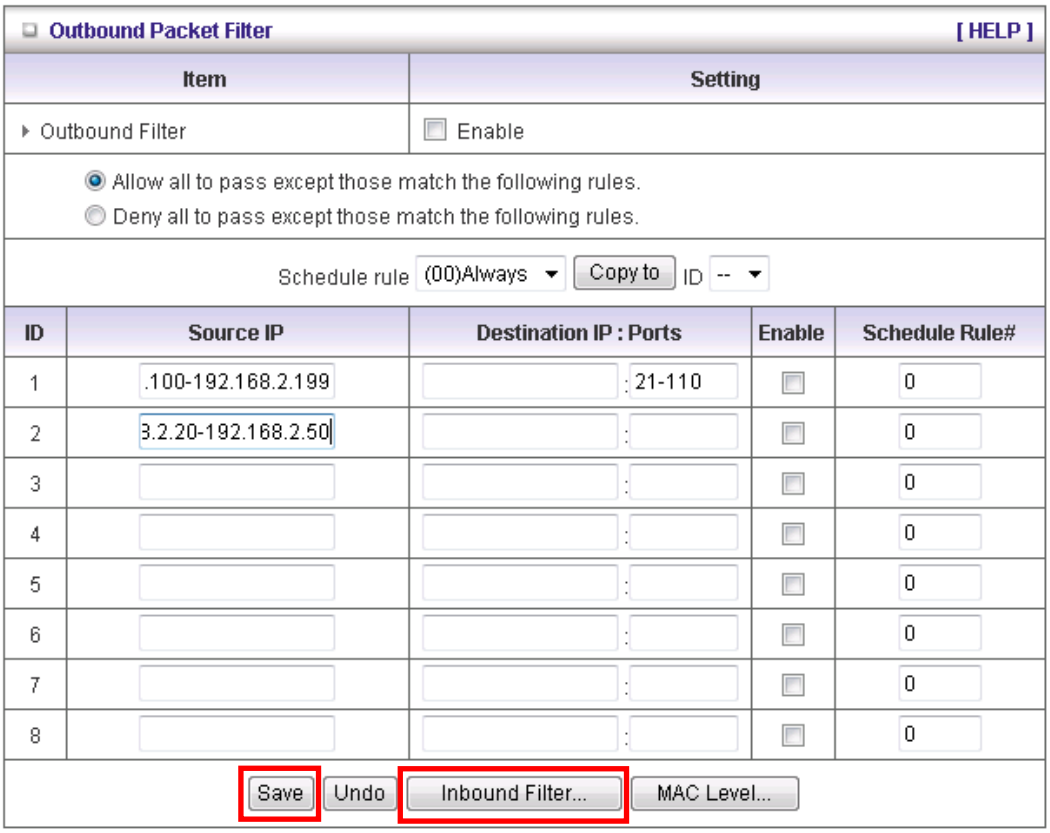

AR686W Wireless N 300 Green Router
English
ADMINISTRATOR's MAIN MENU
Status
Wizard
Advanced
Logout
BASIC SETTING
FORWARDING RULES
SECURITY SETTING
ADVANCED SETTING
TOOLBOX
Packet Filters
Domain Filters
URL Blocking
MAC Access Control
Miscellaneous
Security Setting
Packet Filters
- Allows you to control access to a network by analyzing the incoming and outgoing packets and letting them pass or halting them based on the IP address of the source and destination.
Domain Filters
- Let you prevent users under this device from accessing specific URLs.
URL Blocking
- URL Blocking will block LAN computers to connect to pre-defined websites.
MAC Address Control
- MAC Address Control allows you to assign different access right for different users and to assign a specific IP address to a certain MAC address.
Miscellaneous
- Remote Administrator Host: In general, only Intranet user can browse the built-in web pages to perform administration task. This feature enables you to perform administration task from remote host.
- Administrator Time-out: The amount of time of inactivity before the device will automatically close the Administrator session. Set this to zero to disable it.
- Discard PING from WAN side: When this feature is enabled, hosts on the WAN cannot ping the Device.

3.3.1 Packet Filters

Packet Filters allows you to control access to a network by analyzing the incoming and outgoing packets and letting them pass or halting them based on the IP address of the source and destination. Outbound Filter applies on all outbound packets but Inbound Filter applies only on packets that are destined to Virtual Servers or DMZ host.

If you want to restrict users from accessing certain Internet applications/services (e.g. Internet websites, email, FTP etc.) by their IP addresses, you can set up the filtering rules here. Packet filters can be helpful in securing or restricting your local network.

Example:



Computers with IP addresses between 192.168.2.20 to 192.168.2.50 have no restriction on accessing any network services, while other computers are all blocked. Meanwhile, computers with IP addresses between 192.168.2.100 to 192.168.2.199 are allowed to send Email (port 25), receive E-mail (port 110), and browse Internet (port 80).

For each rule, you can define:

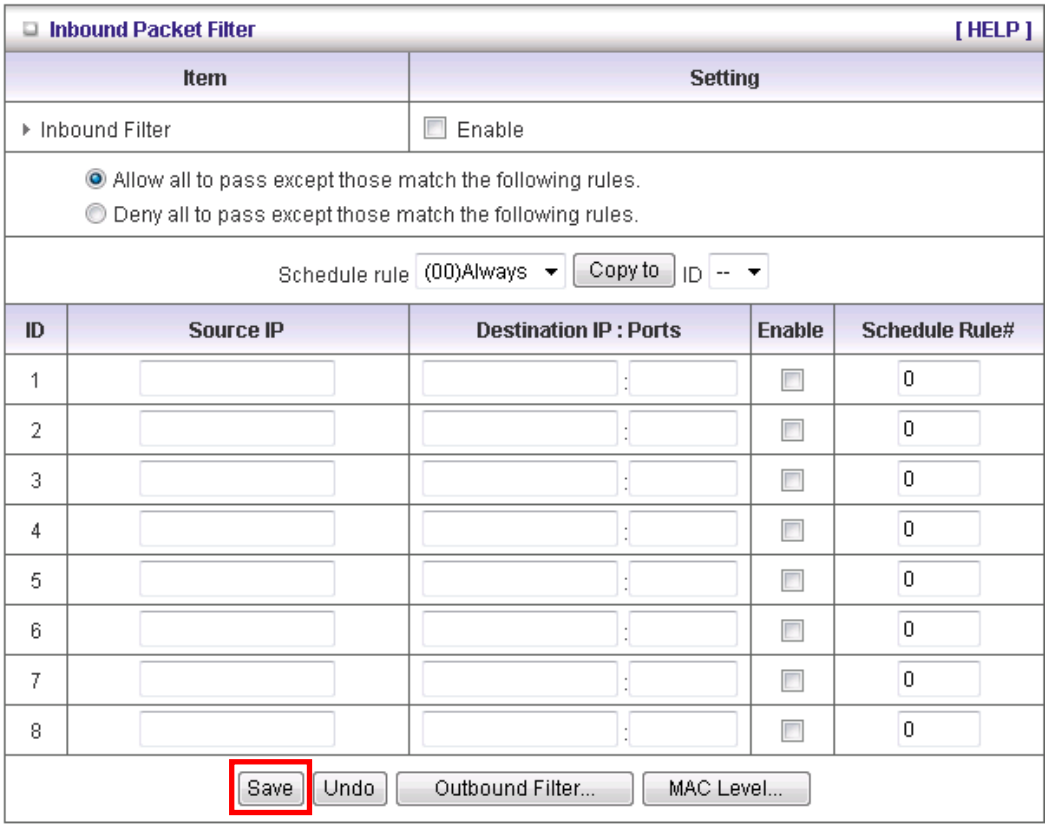
- Source IP address
- Destination IP address
- Destination port address
- Protocol: TCP or UDP or both.

Parameters	Description
Outbound Packet Filter	Check/uncheck Enable to enable/disable the Packet Filtering. Outbound Filter applies on all outbound packets but Inbound Filter applies only on packets that are destined to Virtual Servers or DMZ host.
Allow / Deny all to pass except those match the following rules	Please select “Allow” or “Deny” to decide the behavior of packet filtering table. If you select allow, all traffic will be allowed except the Source IP addresses listed in filtering table will be rejected to connect to the destination IP addresses and ports. If you select deny, all traffic will be denied except the Source IP address listed in filtering table will be allowed to connect to the destination IP addresses and ports.
Source IP	Please input the client’s IP address you wish to apply the filtering rule. You can input a single IP address (192.168.2.10) or a range of IP addresses (192.168.2.10-192.168.2.50). Leaving this field blank indicates all IP addresses.
Destination IP	Please input the Destination IP address (i.e. an FTP site, Email server, etc.) you wish to apply the filtering. You can input a single IP address (192.168.2.10) or a range of IP addresses (192.168.2.10-192.168.2.50), leaving this field blank means all IP addresses.
Port	Please input the port number here. You can define a single port (80) or a range of ports (1000-1999). Add prefix "T" or "U" to specify TCP or UDP protocol, for example, T80, U53, U2000-2999. No prefix indicates both TCP and UDP are defined. Leaving this field blank indicates all ports.
Enable	Check/uncheck Enable to enable/disable each Packet Filtering rule.
Schedule Rule#	Enter a Schedule Rule number to activate the filtering rule only within the desired time frame. Please refer to ***3.4.7 Schedule***

	Rule for detailed setting instructions. Set 0 to let the filtering rule always take effect.
Inbound Filter	Click Inbound Filter button to go to Inbound Packet Filter settings.

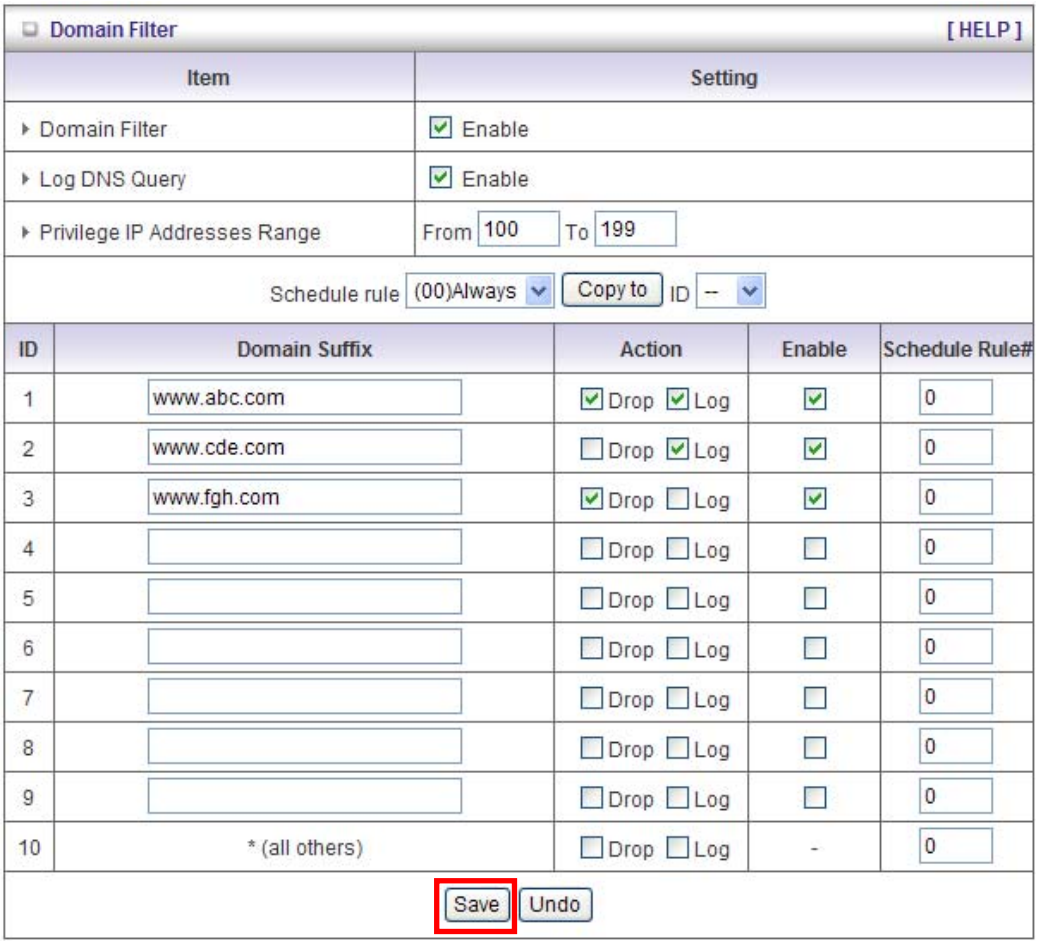
Click on **Save** after you've finished all settings.

Click on Inbound Filter to configure inbound traffic filters.



3.3.2 Domain Filters

You can block users from accessing specific domains on the internet. This feature can help parents to manage the Internet usage for their children (i.e. Parental Control).



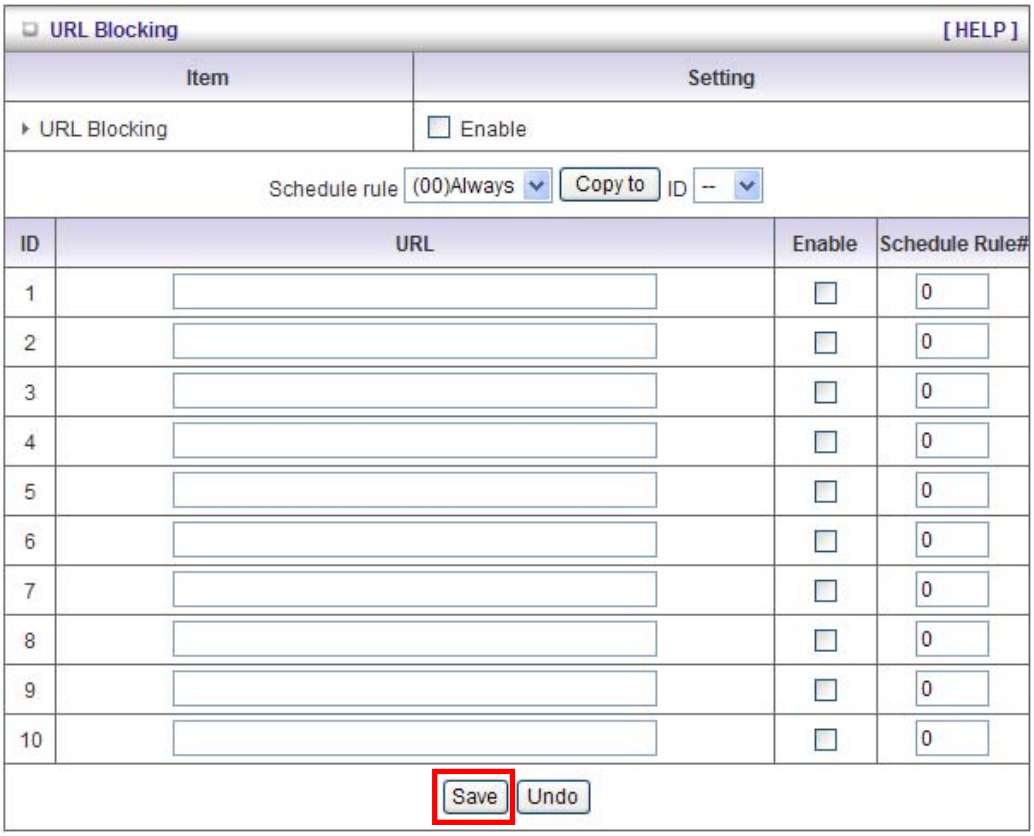
Parameter	Description
Domain Filter	Check/Uncheck Enable box to enable/disable Domain Filter.
Log DNS Query	Check/Uncheck Enable box to enable/disable logging DNS Query.
Privilege IP Address Range	Enter a host IP address range that has privilege to access any network service without restriction. For example, From 10 to 20.
Domain Suffix	You can enter a domain suffix of URL to be restricted, for example, ".com" or "xxx.com".

Action	Check **Drop** or **Log** or both to determine the actions of router, when user attempts to access the restricted domain. According to the settings in the screenshot above: Link request to www.abc.com will be dropped and recorded in log file. Link request to www.cde.com will be allowed but will be recorded in log file. Link request to www.fgh.com will be dropped and will not be recorded in log file. However, IP Address from 192.168.2.100 to 192.168.2.199 will not be restricted.
Enable	Check/Uncheck Enable box to enable/disable each rule individually.
Schedule Rule#	Enter a Schedule Rule number to activate the filtering rule only within the desired time frame. Please refer to ***3.4.7 Schedule Rule*** for detailed setting instructions. Set 0 to let the filtering rule always take effect.

Click on **Save** after you've finished all settings.

3.3.3 URL Blocking

You can block access to certain websites or web contents from local PCs by entering a full URL address or just keywords. The major difference between “Domain Filter” and “URL Blocking” is that Domain Filter requires user to input a suffix (like .com or .org, etc), while URL Blocking requires user to input a **keyword** only. In other words, Domain Filter can block specific websites, while URL Blocking can block any website that contains the specific keyword. This feature can also help parents to manage the Internet usage for their children (i.e. Parental Control).



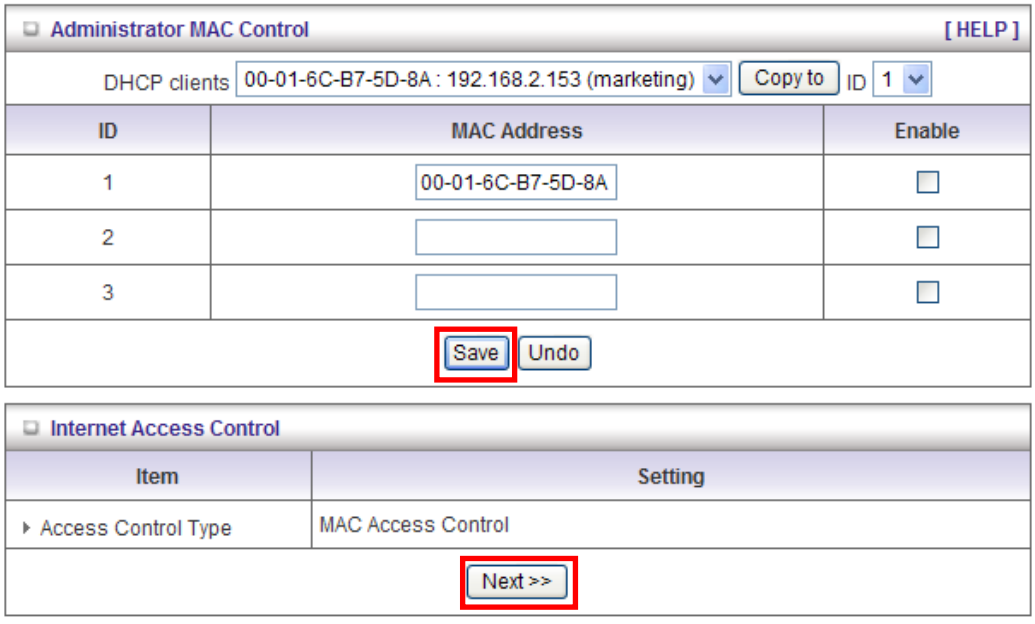
Parameter	Description
URL Blocking	Check/Uncheck Enable box to enable/disable URL Blocking.
URL	You can enter the full URL address of a website or any **keyword** you want to block, for example “XXX”.
Enable	Check/Uncheck Enable box to enable/disable each URL

	individually.
Schedule Rule#	Enter a Schedule Rule number to activate the filtering rule only within the desired time frame. Please refer to ***3.4.7 Schedule Rule*** for detailed setting instructions. Set 0 to let the filtering rule always take effect.

Click on **Save** after you've finished all settings.

3.3.4 MAC Access Control

MAC Access Control will help you to prevent unauthorized users from connecting to your wireless router. Only those network devices with MAC addresses you specified here are allowed to access your wireless router. You can utilize this function with other security measures described in previous sections together to enhance the safety of your wireless network.

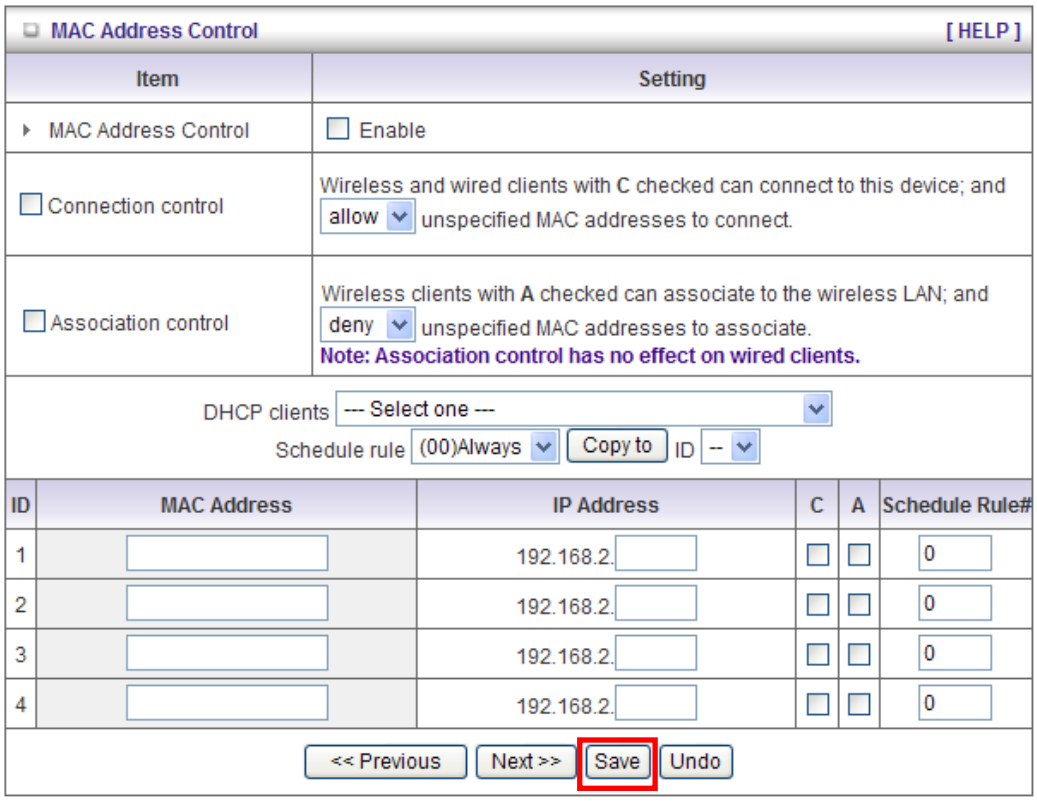


Before you configure any MAC control settings, you can set up to 3 administrative computers that will not be restricted by MAC Control rules.

Select the desired setting and click **Next>>** for detailed configuration.

3.3.4.1 MAC Address Control

This feature allows you to control Internet access based on MAC address and time schedule.

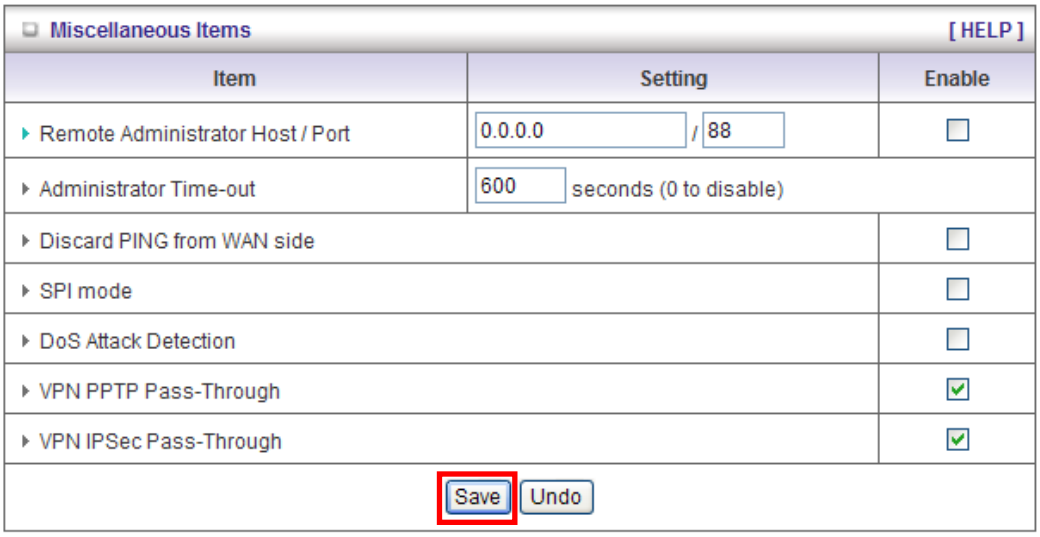


Parameters	Description
MAC Access Control	Check this box to enable the MAC filtering function. All settings in this page will take effect only when Enable is checked.
Connection Control	Check this box to enable the rule that wireless or wired clients whose MAC addresses are in the table can connect to the router. Choose "allow" or "deny" to determine whether the router allows or denies connection from other clients whose MAC addresses are not in the table.
Association Control	Check this box to enable the rule that only the wireless clients whose MAC addresses are in the table can associate to the wireless LAN. If a client is denied to associate to the wireless LAN, it means it cannot send or receive any data via this router wirelessly. Choose "allow" or "deny" to determine if the router allows or denies wireless association from clients whose MAC addresses are not in the table.

DHCP Clients	Select a DHCP client from the drop down list. Select an ID number and click **Copy To**. The client's MAC address will be copied to the ID you selected; you do not need to enter it manually.
MAC Address	Input the MAC address of your computer / network device.
C	Check this box to allow the wired/wireless client to connect to the router.
A	Check this box to allow the wireless client to associate to the wireless network.
Previous / Next	You can set up to 32 MAC control rules for this router. Click Previous or Next to reach the previous or next 4 entries.
Schedule Rule#	Enter a Schedule Rule number to activate the filtering rule only within the desired time frame. Please refer to ***3.4.7 Schedule Rule*** for detailed setting instructions. Set 0 to let the filtering rule always take effect.

Click on **Save** after you've finished all settings.

3.3.5 Miscellaneous



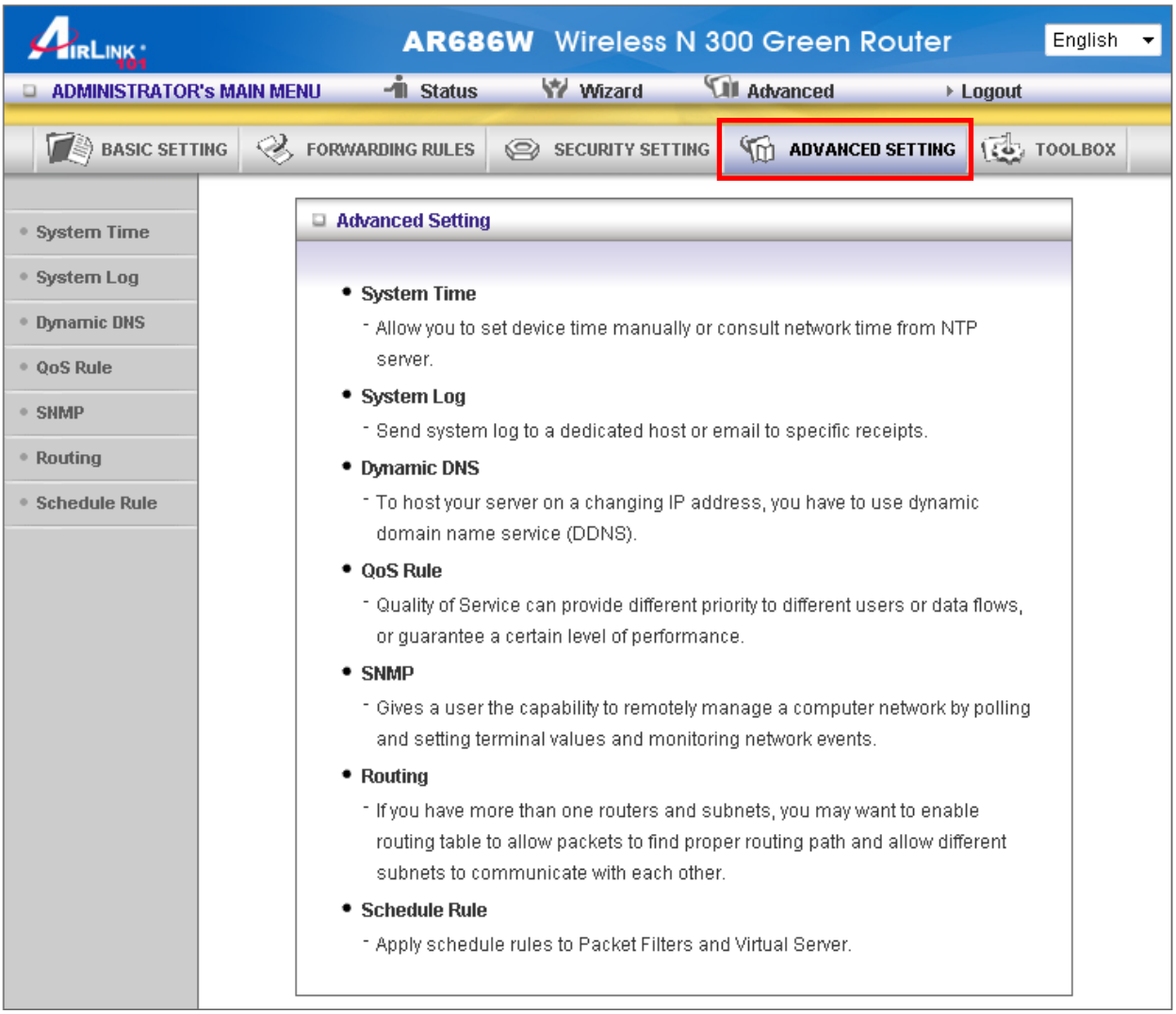
Parameters	Description
Remote Administrator Host/ Port	This feature enables you to perform administration task from remote host. If this feature is enabled, only the specified IP address can perform remote administration. Setting the specified IP address as 0.0.0.0 indicates any host can connect with this product to perform administration task. You can specify a port number for remote administrator; the default value is 88.
Administrator Time-out	The system will log out the administrator after no activity for a period of time. You may set the time-out period to zero to disable this feature.
Discard PING from WAN side	Check this box to enable Discard PING from WAN side. When you enable this feature, your router will not respond to a “ping” request from any host on the WAN side.
SPI Mode	Stateful Packet Inspection mode is a firewall that keeps track of the state of network connections (such as TCP, UDP communication) travelling across it. The firewall is programmed to distinguish legitimate packets for different types of connections. Only packets matching a known connection state will be allowed by the firewall; others will be rejected.
DoS Attack Detection	Check this box to enable the DoS Attack Detection. Router will block the DoS once it is detected. Denial of Service (DoS) is a common attack measure, by transmitting a great amount of data or requests to your Internet IP address and server, the Internet

	connection will become very slow, and server may stop responding because it is not capable to handle too much traffic.
VPN PPTP Pass-Through	Check this box and the router will enable PPTP packets to pass through the router for VPN connection
VPN IPSec Pass-Through	Check this box and the router will enable IPsec packets to pass through the router for VPN connection.

Click on **Save** after you've finished all settings.

3.4 Advanced Setting

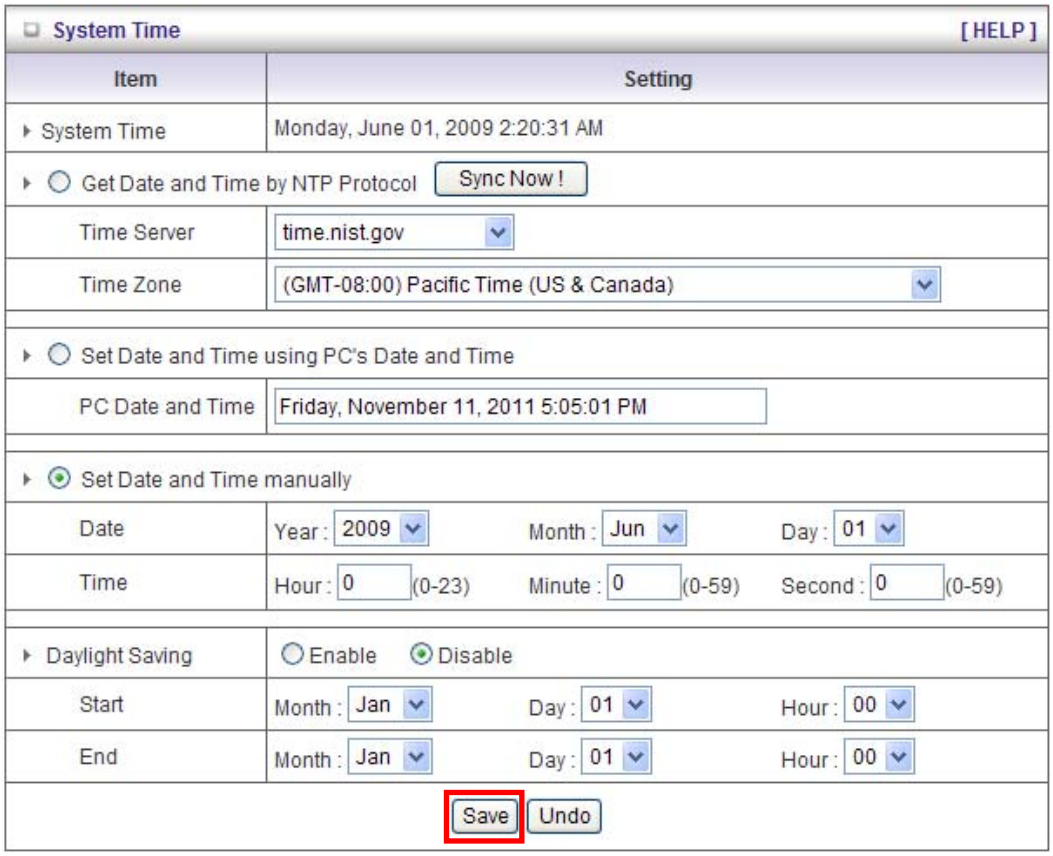
This page allows you to set up System Time, System Log, Dynamic DNS, QoS Rule, SNMP, Routing and Schedule Rule, and other advanced settings.


AIRLINK 101
AR686W Wireless N 300 Green Router
English
ADMINISTRATOR's MAIN MENU
Status
Wizard
Advanced
Logout
BASIC SETTING
FORWARDING RULES
SECURITY SETTING
ADVANCED SETTING
TOOLBOX
System Time
System Log
Dynamic DNS
QoS Rule
SNMP
Routing
Schedule Rule
Advanced Setting
System Time
- Allow you to set device time manually or consult network time from NTP server.
System Log
- Send system log to a dedicated host or email to specific receipts.
Dynamic DNS
- To host your server on a changing IP address, you have to use dynamic domain name service (DDNS).
QoS Rule
- Quality of Service can provide different priority to different users or data flows, or guarantee a certain level of performance.
SNMP
- Gives a user the capability to remotely manage a computer network by polling and setting terminal values and monitoring network events.
Routing
- If you have more than one routers and subnets, you may want to enable routing table to allow packets to find proper routing path and allow different subnets to communicate with each other.
Schedule Rule
- Apply schedule rules to Packet Filters and Virtual Server.

3.4.1 System Time

To specify correct system time for your router is very important. It will affect the schedule rule and system logs. This router provides 3 ways to configure the system date and time:

1) Synchronize with time server. (The router must connect to the Internet.)
   > Select **Get Date and Time by NTP Protocol**
2) Synchronize with PC.
   > Select **Set Date and Time using PC's Date and Time**
3) Manually configure the time
   - Select **Set Date and Time manually**



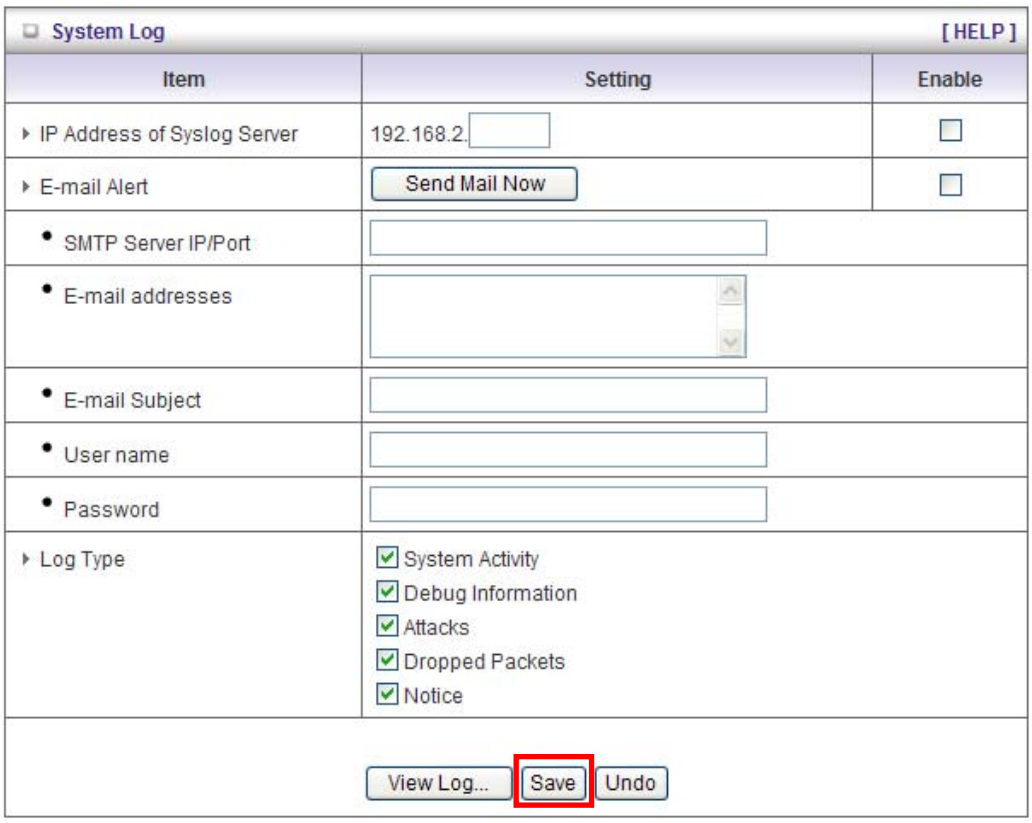
Parameter	Description
System Time	Displaying the current system time of router.
Sync Now	Click this button to synchronize the system time with the desired

	time server. (The router must be connected to the Internet to be able to synchronize time.)
Time Server	Select a time server here.
Time Zone	You can select your local time zone here. The router will synchronize time according to your time zone selection.
PC Date and Time	Select “Set Date and Time using PC’s Date and Time”, and router will automatically copy the date and time from your PC.
Date / Time	Select Year, Month, Day, Hour, Minute, and Second if you wish to set the system date and time manually.
Daylight Saving	Select Enable or Disable for daylight saving according to where you are located.
Start / End	If you enabled daylight saving, please specify the first and last date of daylight saving time.

Click on **Save** after you’ve finished all settings.

3.4.2 System Log

You can enable this function to log all important system events for your router. This page provides upports two methods to export system logs to specific destination by means of syslog (UDP) and SMTP (TCP).

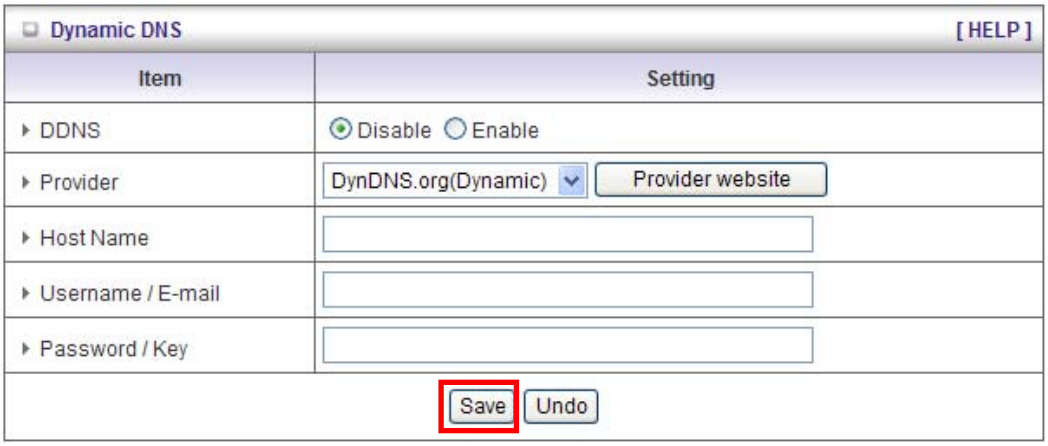


Parameters	Description
IP Address of Syslog Server	Enter the host IP of destination where system log will be sent to. Check Enable box to enable this feature
Email Alert	Check Enable box if you want to enable Email Alert (send syslog via Email). Email Alert will work only if the router connects to Internet.
Send Mail Now	Click Send Mail Now to email system log to the account you set up now.
SMTP Server IP/Port	Input the SMTP server IP and port, which are concatenated with

	'/'. If you do not specify port number, the default value is 25. For example, "mail.abc.com" or "192.168.1.100/25".
Email Addresses	Enter the Email addresses of the recipients who will receive these logs. You can assign more than 1 recipient by using ';' or ',' to separate these Email addresses.
Email Subject	You may input the subject of email alert here, this setting is optional.
Username	Input the user name of the Email account.
Password	Input the password of the Email account.
Log Type	Select the types of communication you wish to log.
View Log	Click View Log to view all system logs.

Click on **Save** after you've finished all settings.

3.4.3 Dynamic DNS

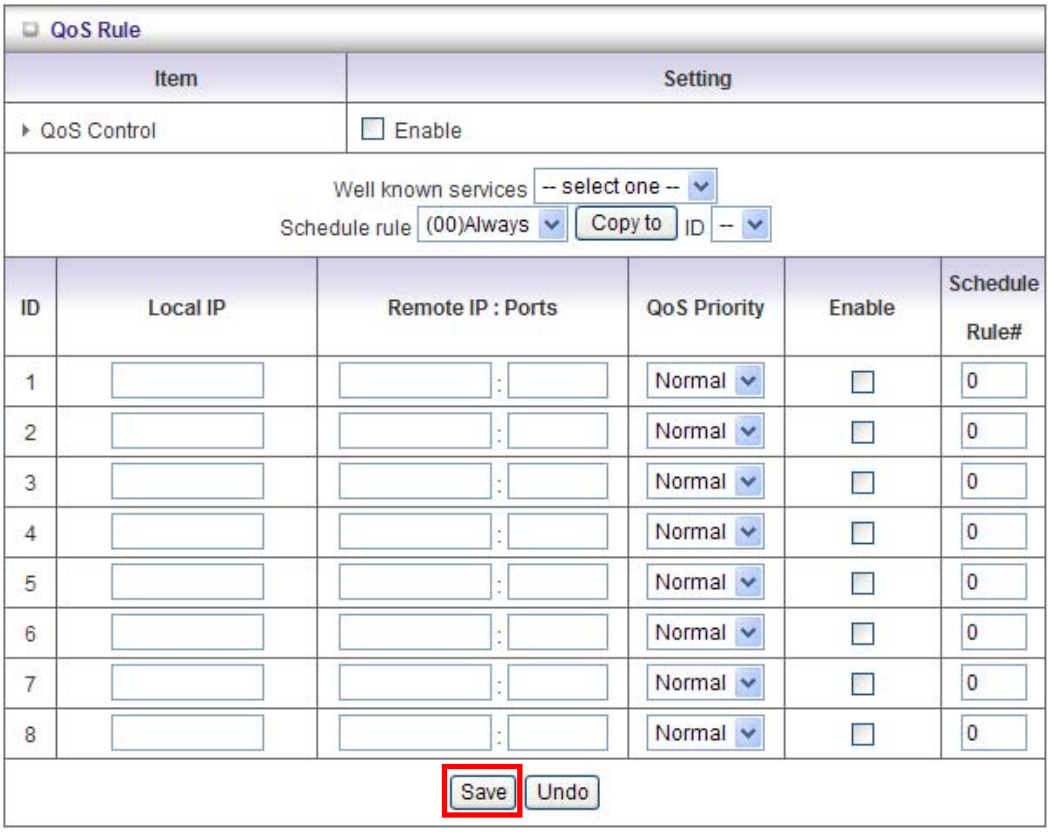


Parameter	Description
DDNS	Select Disable or Enable DDNS function.
Provider	A DDNS provider provides service for you to bind your IP (even private IP) with a certain Domain name. Choose a desired provider.
Provider Website	Click Provider Website to go to the selected DDNS provider's website.
Host Name	You can register a domain name at the DDNS provider's website. The full domain name is concatenated with host name (you specify) and a suffix (DDNS provider specifies). For example, ABChome.dyndns.org.
Username / E-mail	This field is required by DDNS provider to authenticate its users. Input username you registered to the DDNS provider.
Password / Key	This field is required by DDNS provider to authenticate its users, too. Input password or key according to the DDNS provider you select.

Click on **Save** after you've finished all settings.

3.4.4 QoS Rule

Quality of Service provides an efficient way for computers on the network to share the Internet bandwidth with a promised quality of Internet service. Without QoS, all computers and devices on the network will compete with one another to get Internet bandwidth, and some applications which require guaranteed bandwidth (like video streaming and network telephone) will be affected; therefore, an unpleasing result will occur, such as interruptions to video / audio streaming.



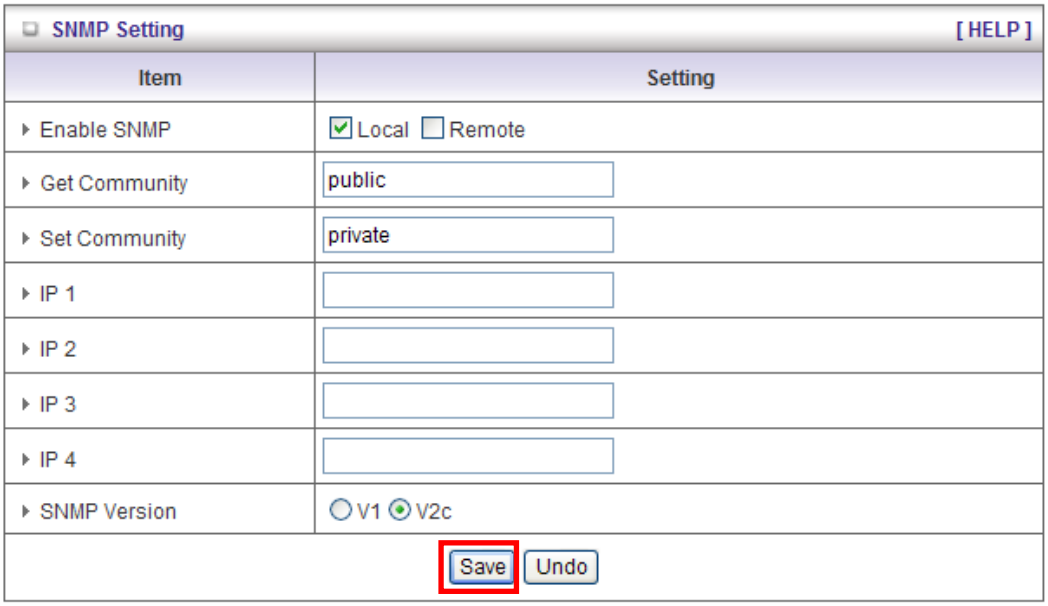
Parameter	Description
QoS Control	Check Enable box to enable QoS function.
Well known services	Select a network service, a schedule rule and ID#, and click "**Copy to**". The settings you selected will be filled into the specific ID.
Local IP	Specify a local (source) IP address that will be affected by this

	rule.
Remote IP Address	Specify a remote (destination) IP address that will be affected by this rule.
Ports	Please input the range of remote (destination) port number that will be affected by this rule. If you want to apply this rule on port 80 to 90, please input “80-90”; if you want to apply this rule on a single port, just input the port number, such as 80. If the remote (destination) IP address and /or port number is universal, just leave it blank.
QoS Priority	Assign High, Normal, or Low priority to the specific network client.
Enable	Check this box to enable individual QoS rule.
Schedule Rule#	Enter a Schedule Rule number to activate the QoS rule only within the desired time frame. Please refer to ***3.4.7 Schedule Rule*** for detailed setting instructions.

Click on **Save** after you’ve finished all settings.

3.4.5 SNMP

Configure the router to allow administrative computers to control it through SNMP(Simple Network Management Protocol).



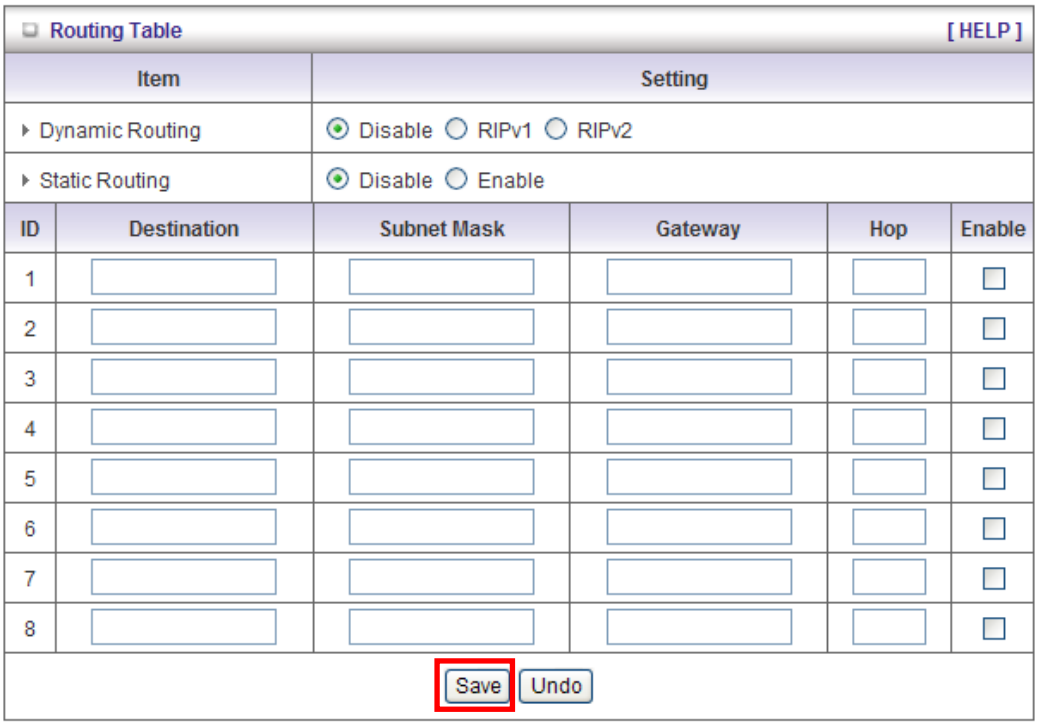
Parameter	Description
Enable SNMP	You must check either Local or Remote or both to enable SNMP function. If *Local* is checked, this device will respond to requests from LAN. If *Remote* is checked, this device will respond to requests from WAN.
Get Community	Setting the community of GetRequest your device will respond to.
Set Community	Setting the community of SetRequest your device will accept.
IP 1~4	Input your SNMP Management PC's IP here. User has to configure where this device should send SNMP Trap message to.
SNMP Version	Please select proper SNMP Version that your SNMP Management software supports.

Click on **Save** after you've finished all settings.

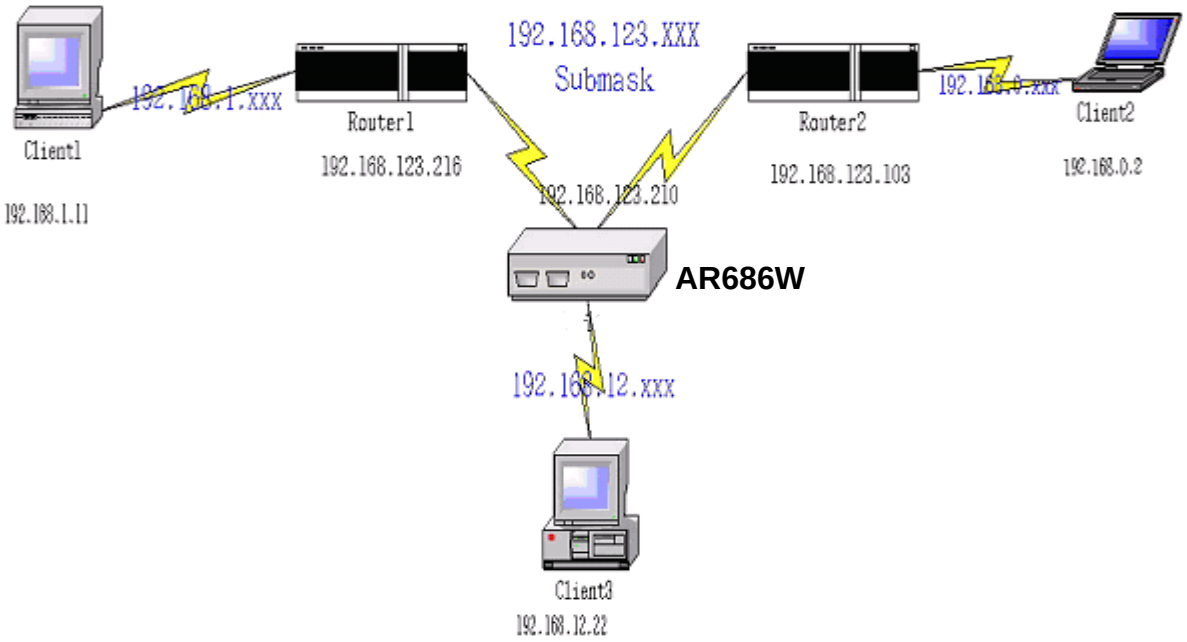
3.4.6 Routing

Routing Table allows you to determine which physical interface address to use for outgoing IP data grams. If you have more than one router and subnet, you will need to enable routing table to allow packets to find proper routing path and allow different subnets to communicate with each other.

For static routing, you can specify up to 8 routing rules. You can enter the destination IP address, subnet mask, gateway, hop for each routing rule, and then enable or disable the rule by checking or un-checking the Enable checkbox.



For Example:



Configuration on Static Routing

Destination	Subnet Mask	Gateway	Hop	Enabled
192.168.1.0	255.255.255.0	192.168.123.216	1	√
192.168.0.0	255.255.255.0	192.168.123.103	1	√

When Client3 wants to send an IP data gram to 192.168.0.2, it will use the above table to determine that it has to go via 192.168.123.103 (a gateway), and if it sends packets to 192.168.1.11, it will go via 192.168.123.216

Parameter	Description
Dynamic Routing	Routing Information Protocol (RIP) will exchange information about destinations for computing routes throughout the network. Please select RIPv2 only if you have different subnet in your network. Otherwise, please select RIPv1 if you need this protocol.

Static Routing	Select Enable or Disable to enable or disable Static Routing function.
Destination	Enter a destination IP address. The Destination IP is the address of the remote network or host to which you want to assign a static route.
Subnet Mask	Enter the subnet mask. The Subnet Mask determines which portion of a Destination IP address is the network portion, and which portion is the host portion.
Gateway	Enter the gateway IP address. This is the IP address of the gateway device that allows for contact between the Router and the remote network or host.
Hop	Specify the number of next hop.
Enable	Check or uncheck Enable box to enable or disable the static routing rule.

Click on **Save** after you've finished all settings.

3.4.7 Schedule Rule

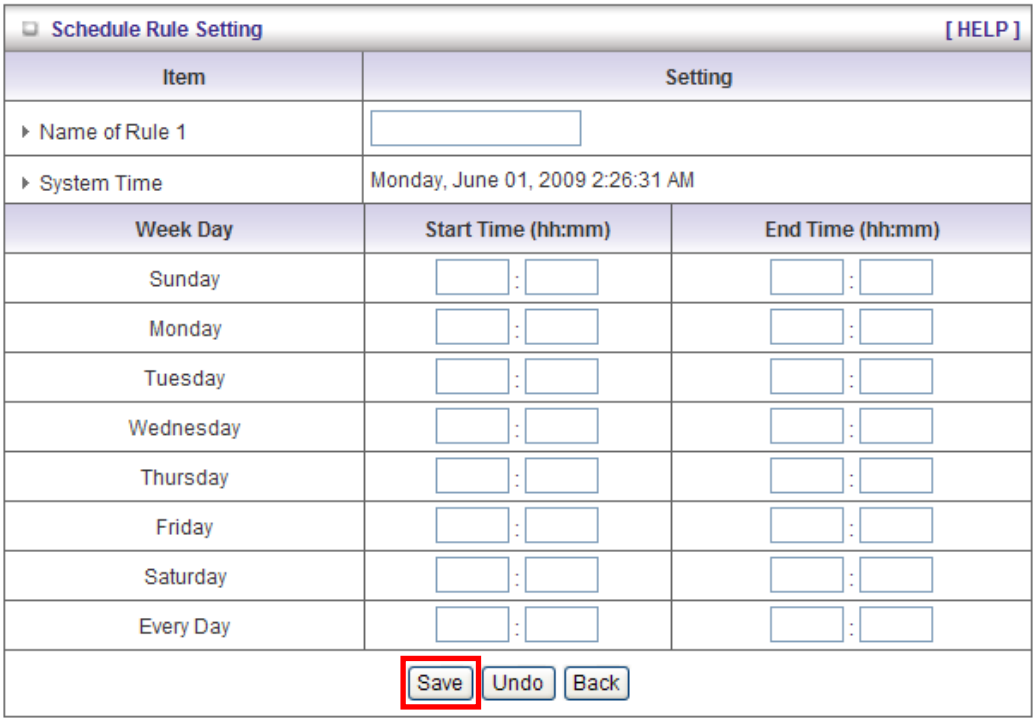
You can configure schedule rules to control the time frame of network access.

Parameter	Description
Schedule	Check or uncheck Enable to enable or disable the schedule rule.
Rule#	Displaying rule numbers.
Rule Name	Displaying rule names that have been added to the schedule rule table.
Action	Click on Edit to modify the schedule rule or Delete to remove the rule from the schedule rule table.
Add New Rule	Click on Add New Rule to add a new rule to the schedule rule table. Please see *3.4.7.1* for detailed instructions.

Click on **Save** after you've finished all settings.

3.4.7.1 Add New Rule

You can add a new schedule rule in this page.

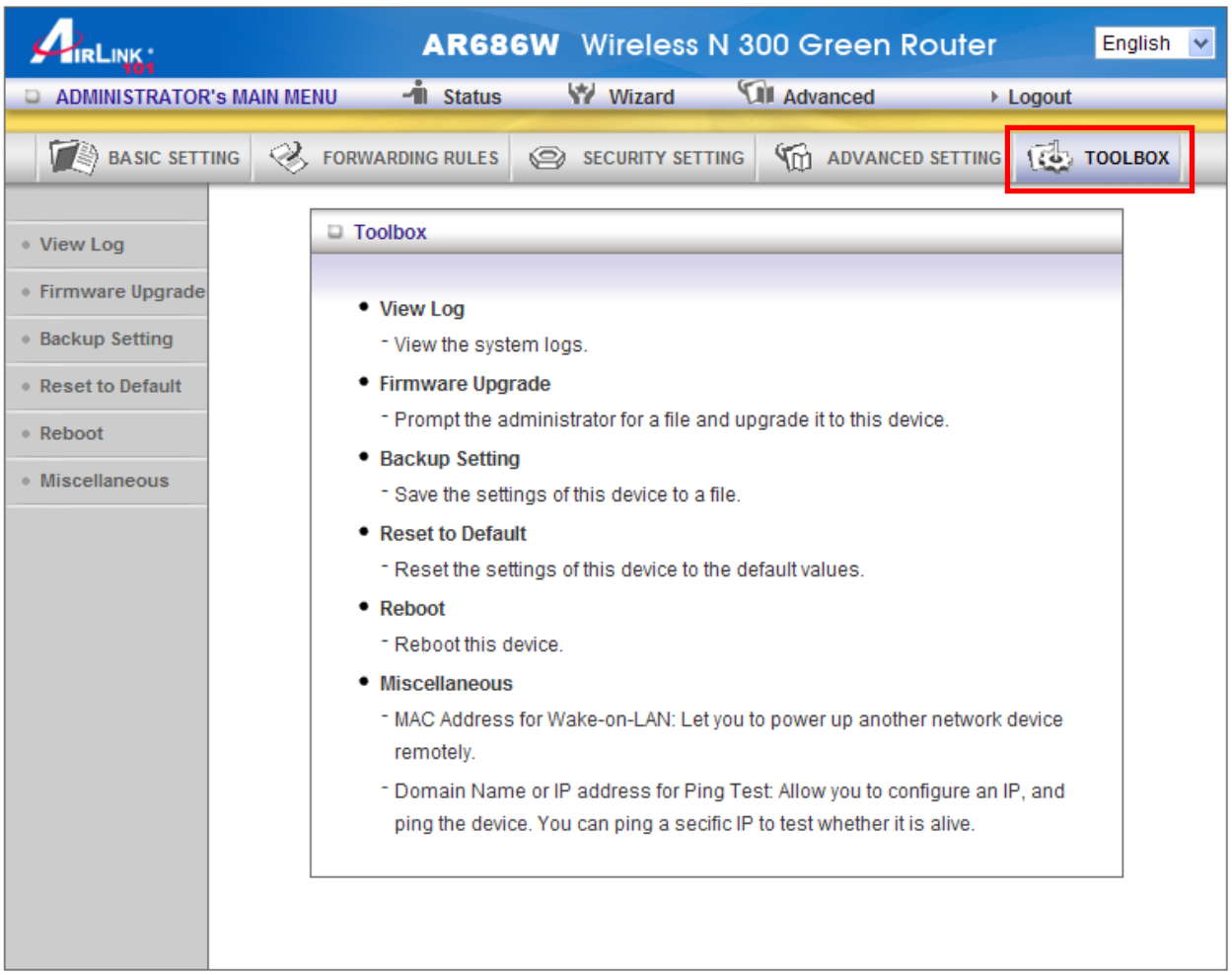


Parameter	Description
Name of Rule#	Enter a name for the new rule.
System Time	Displays the current system time of the router for you to verify if this matches with the date/time of where you are located. You can refer to *3.4.1* on how to modify the system time.
Week Day	You can set time schedule for each individual day or for Every Day.
Start Time/End Time (hh:mm)	Enter the start and end time of a time schedule. For example, Start Time 01:00, End Time 23:00. Please note that End Time should not be prior to Start Time.

Click on **Save** after you've finished all settings, and click **Back** to go back to Schedule Rule page.

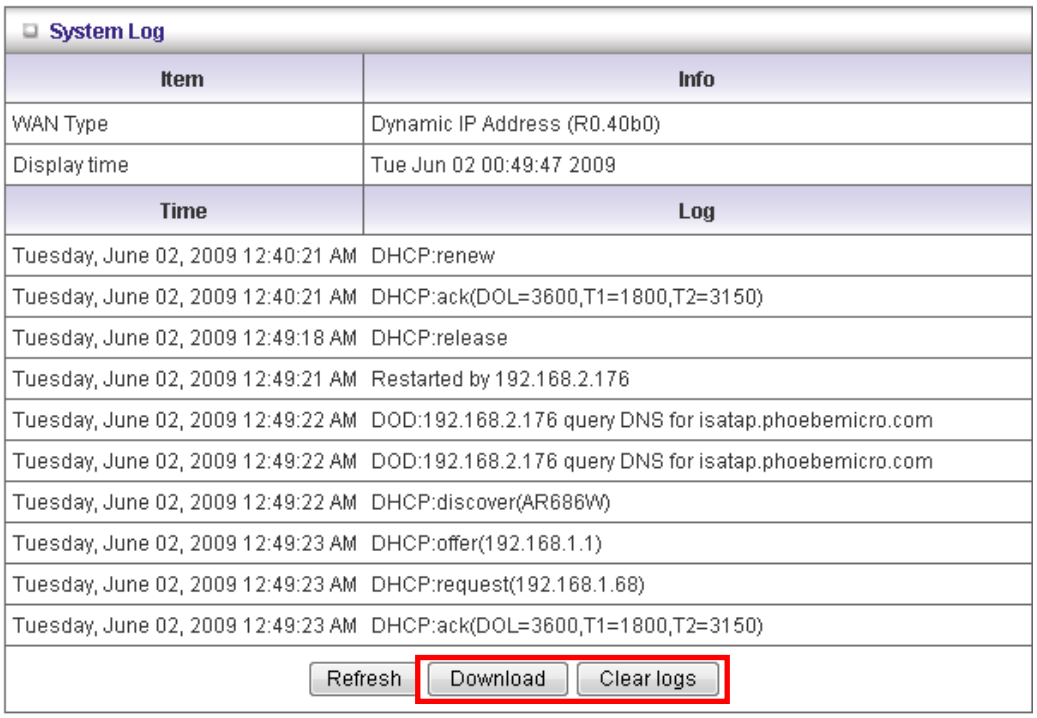
3.5 Toolbox

The Toolbox page allows you to view system logs, upgrade firmware, save/reload configuration settings, reset factory default settings, reboot the router, and perform ping test.


AR686W Wireless N 300 Green Router
English
ADMINISTRATOR's MAIN MENU
Status
Wizard
Advanced
Logout
BASIC SETTING
FORWARDING RULES
SECURITY SETTING
ADVANCED SETTING
TOOLBOX
View Log
Firmware Upgrade
Backup Setting
Reset to Default
Reboot
Miscellaneous
Toolbox
View Log
- View the system logs.
Firmware Upgrade
- Prompt the administrator for a file and upgrade it to this device.
Backup Setting
- Save the settings of this device to a file.
Reset to Default
- Reset the settings of this device to the default values.
Reboot
- Reboot this device.
Miscellaneous
- MAC Address for Wake-on-LAN: Let you to power up another network device remotely.
- Domain Name or IP address for Ping Test: Allow you to configure an IP, and ping the device. You can ping a secific IP to test whether it is alive.

3.5.1 View Log

You can view, download, and clear the system logs stored in the router here.



System Log

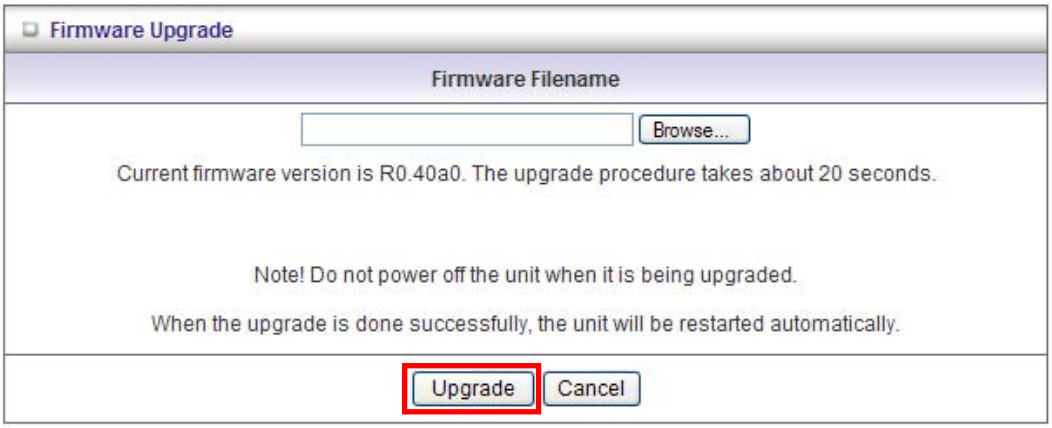
Item	Info
WAN Type	Dynamic IP Address (R0.40b0)
Display time	Tue Jun 02 00:49:47 2009

Time	Log
Tuesday, June 02, 2009 12:40:21 AM	DHCP:renew
Tuesday, June 02, 2009 12:40:21 AM	DHCP:ack(DOL=3600,T1=1800,T2=3150)
Tuesday, June 02, 2009 12:49:18 AM	DHCP:release
Tuesday, June 02, 2009 12:49:21 AM	Restarted by 192.168.2.176
Tuesday, June 02, 2009 12:49:22 AM	DOD:192.168.2.176 query DNS for isatap.phoebemicro.com
Tuesday, June 02, 2009 12:49:22 AM	DOD:192.168.2.176 query DNS for isatap.phoebemicro.com
Tuesday, June 02, 2009 12:49:22 AM	DHCP:discover(AR686W)
Tuesday, June 02, 2009 12:49:23 AM	DHCP:offer(192.168.1.1)
Tuesday, June 02, 2009 12:49:23 AM	DHCP:request(192.168.1.68)
Tuesday, June 02, 2009 12:49:23 AM	DHCP:ack(DOL=3600,T1=1800,T2=3150)

Refresh | Download | Clear logs

3.5.2 Firmware Upgrade

You can view the current firmware version of router in this page.
To upgrade the firmware for the router, you must use a computer that is wired connected to the router. You need to download the firmware from www.airlink101.com and save it to your local hard disk first. You may need to unzip it if it is a .zip file.

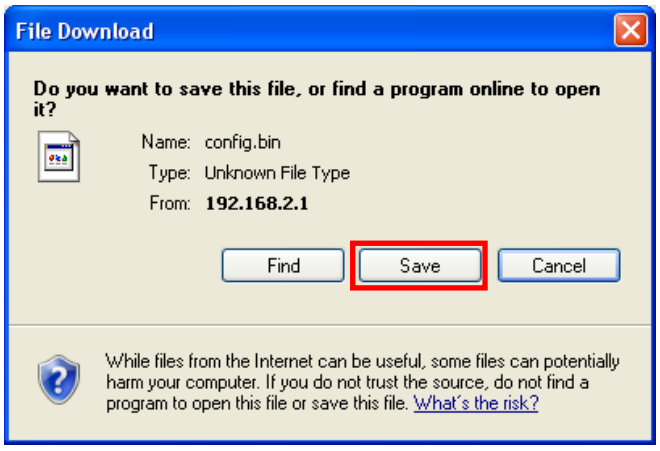

Firmware Upgrade
Firmware Filename
Browse...
Current firmware version is R0.40a0. The upgrade procedure takes about 20 seconds.
Note! Do not power off the unit when it is being upgraded.
When the upgrade is done successfully, the unit will be restarted automatically.
Upgrade
Cancel

Click on **Browse** to select the firmware you just downloaded/unzipped, and then click **Upgrade** to start the upgrade process. (You may have to wait for a few minutes for the upgrade to complete).

NOTE: *Never interrupt the upgrade process by closing the web browser or disconnect your computer from router. If the firmware you uploaded is corrupt, the firmware upgrade will fail, and you may contact Technical Support for help.*

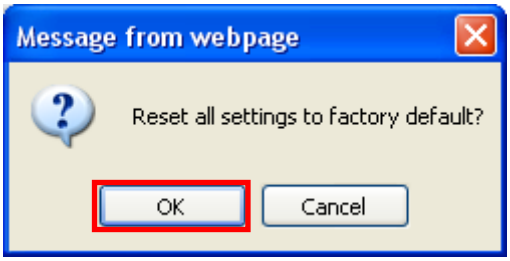
3.5.3 Backup Setting

You can save the router's factory default settings to your local hard disk by clicking on Backup Setting and save it as a .bin file. Once you need to restore the settings, please go to Firmware Upgrade page and load the .bin file you saved.


File Download
Do you want to save this file, or find a program online to open it?
Name: config.bin
Type: Unknown File Type
From: 192.168.2.1
Find
Save
Cancel
While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not find a program to open this file or save this file. What's the risk?

3.5.4 Reset to Default

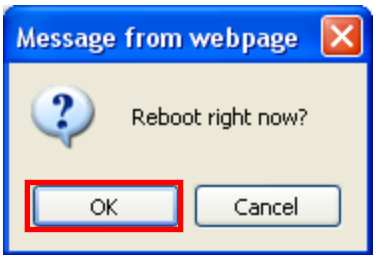
To restore the router settings to factory default, click on Reset to Default, and you will be prompted:



Click OK to continue or Cancel to exit.

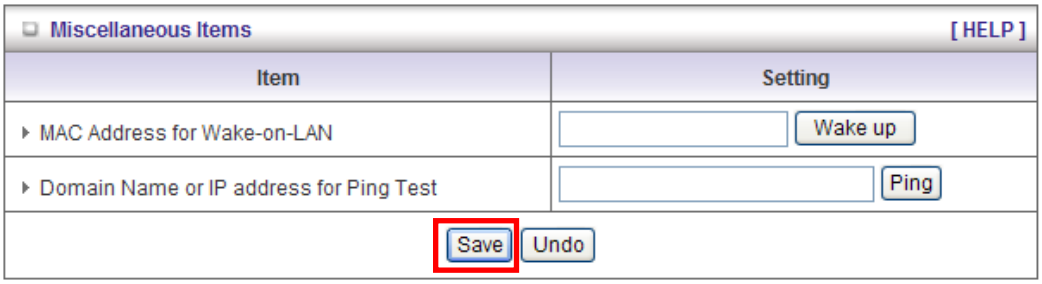
3.5.5 Reboot

To reboot the router, click on Reboot, and you will be prompted:



Click OK to continue or Cancel to exit.

3.5.6 Miscellaneous

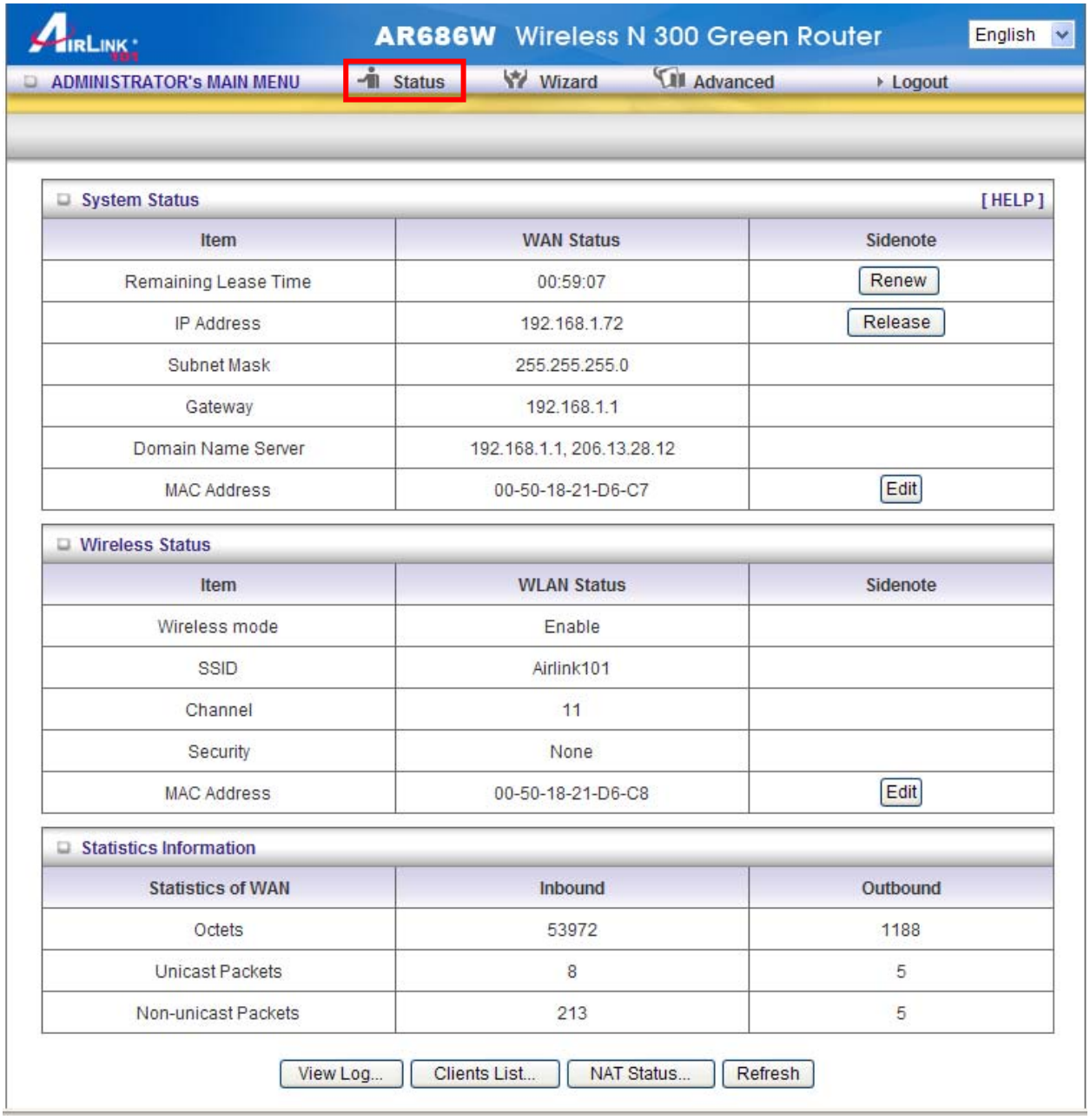


Parameter	Description
MAC Address for Wake-on-LAN	Wake-on-LAN is a technology that enables you to power up a networked device remotely. In order to use this feature, the target device must be Wake-on-LAN enabled and you have to know the MAC address of this device. Enter the MAC address of the device and click **Wake Up**. The router will send wake-up frame to the target device immediately and the device can be powered up remotely.
Domain Name or IP Address for Ping Test	Enter a domain name (i.e. google.com) or IP address to perform ping test. If you can ping a remote website, it means the Internet is connected.

Click on **Save** after you've finished all settings.

Chapter 4 Status

The Status section allows you to monitor the current status of your router. You can use the Status page to monitor: the Internet connection, Wireless, NAT status, and the statistics information of the Router.



4.1 System Status

You can view the status of current Internet connection. By clicking Renew and Release, you can renew and release the WAN IP address obtained from the ISP (Internet Service Provider).

System Status [HELP]

Item	WAN Status	Sidenote
Remaining Lease Time	00:59:07	Renew
IP Address	192.168.1.72	Release
Subnet Mask	255.255.255.0	
Gateway	192.168.1.1	
Domain Name Server	192.168.1.1, 206.13.28.12	
MAC Address	00-50-18-21-D6-C7	Edit

4.2 Wireless Status

You can view the Wireless LAN status of your router, including SSID (the name of your wireless network), Channel number, Security, and Wireless MAC address of the router.

Wireless Status

Item	WLAN Status	Sidenote
Wireless mode	Enable	
SSID	Airlink101	
Channel	11	
Security	None	
MAC Address	00-50-18-21-D6-C8	Edit

4.3 Statistics Information

You can view the statistics information of your router, including inbound and outbound packets.

Statistics Information

Statistics of WAN	Inbound	Outbound
Octets	53972	1188
Unicast Packets	8	5
Non-unicast Packets	213	5

4.4 NAT Status

Click NAT Status on the bottom of the Status page to view NAT Status.

Chapter 5 Appendix

5.1 Hardware Specification

Standards

- IEEE 802.11b / g / n
- IEEE 802.3, 802.3u, 802.3ab

Frequency

- 2.4GHz

Ports

- 1 x 10/100Mbps WAN port
- 4 x 10/100Mbps LAN port

Antenna type

- Two 1.8dBi un-detachable dipole antennas

Operation Modes

- AP
- WDS Bridge
- AP+WDS Bridge

Security

- WEP 64/128-bit
- WPA, WPA2, WPA2-PSK, WPA-PSK
- Radius Server

LEDs

- Power, Status, WAN, WLAN, LAN1~4

Advanced Features

- NAT session
- SPI Firewall
- DoS Protection
- Static and Dynamic route

System Requirement

- Windows®, Mac®, or Linux® operating system
- Installed Ethernet adapter
- Recommended use with Airlink101® Wireless N 300 products

Power

- DC 5V / 1A

Dimensions

- 156 x 110 x 22 mm (L x W x H)

Temperature

- Operating: 0ºC to 40ºC

Humidity

- Operating: 10% to 90% Non-Condensing

Warranty

- Limited 1-year warranty

Certification

- FCC, CE

Technical Support

E-mail: support@airlink101.com

Toll Free: 1-888-746-3238

Website: www.airlink101.com

*Theoretical maximum wireless signal rate derived from IEEE standard 802.11 specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, mix of wireless products used, radio frequency interference (e.g., cordless telephones and microwaves) as well as network overhead lower actual data throughput rate. Compatibility with 802.11n devices from other manufactures is not guaranteed. Specifications are subject to change without notice. Photo of product may not reflect actual content. All products and trademarks are the property of their respective owners. Copyright ©2011 Airlink101®

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